LIEUTENANT GENERAL "PETE" QUESADA AND *GENERALFELDMARSCHALL* WOLFRAM VON RICHTHOFEN: WHAT MADE THEM GREAT?

BY

GREGORY KREUDER

A THESIS PRESENTED TO THE FACULTY OF

THE SCHOOL OF ADVANCED AIR AND SPACE STUDIES

FOR COMPLETION OF GRADUATION REQUIREMENTS

SCHOOL OF ADVANCED AIR AND SPACE STUDIES

AIR UNIVERSITY

MAXWELL AIR FORCE BASE, ALABAMA

JUNE 2009

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
JUN 2009	**N/A**	**-**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Lieutenant General Pete Quesada And Generalfeldmarschall Wolfram Von Richthofen: What Made Them Great?	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **School Of Advanced Air And Space Studies Air University Maxwell Air Force Base, Alabama**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release, distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

This study comprises an analysis of two contemporary tactical airpower commanders from World War II, Lieutenant General Elwood Pete Quesada and Generalfeldmarschall Wolfram Freiherr von Richthofen. It attempts to determine how they succeeded where others failed. Whether solving operational issues, developing technical innovations, or devising logistic solutions, these commanders transcended service-centric doctrine and loyalties in order to achieve their objectives. The author searches for common elements among their personal background, professional education, officer development, and operational experience that help explain their uncommon triumphs. The analysis includes both external and internal factors to determine which is dominant. The final section includes five recommendations intended for those who conduct officer accession, professional development, and promotion boards. The ultimate objective is to provide timeless criteria that transcend technological advancements and the changing character of war. iv

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**SAR**	**191**	

APPROVAL

The undersigned certify that this thesis meets masters-level standards of research, argumentation, and expression.

_____

Dr. Richard R. Muller (Date)

_____

Colonel Robert Ehlers (Date)

DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University.

ACKNOWLEDGEMENTS

My first thanks go to the men and women of SAASS, both the faculty and the students of Class XVIII. They continually pushed me to think more critically about the world, and my discussions with them helped shape my ideas regarding this topic.

Special thanks go to my thesis advisor, Dr. Richard Muller, who was stuck with the unenviable task of making sense of my array of thoughts. His time helped me understand both the question I hoped to answer and provided guidance to help me find my way through the mass of information I had collected. Dr. Ehlers was instrumental in bringing together a product that not only communicated my ideas, but also was more readable.

ABSTRACT

This study comprises an analysis of two contemporary tactical airpower commanders from World War II, Lieutenant General Elwood "Pete" Quesada and *Generalfeldmarschall* Wolfram *Freiherr* von Richthofen. It attempts to determine how they succeeded where others failed. Whether solving operational issues, developing technical innovations, or devising logistic solutions, these commanders transcended service-centric doctrine and loyalties in order to achieve their objectives. The author searches for common elements among their personal background, professional education, officer development, and operational experience that help explain their uncommon triumphs. The analysis includes both external and internal factors to determine which is dominant. The final section includes five recommendations intended for those who conduct officer accession, professional development, and promotion boards. The ultimate objective is to provide timeless criteria that transcend technological advancements and the changing character of war.

CONTENTS

Introduction

History does not entrust the care of freedom to the weak or the timid.

-- *General Dwight Eisenhower*

During World War II, certain air force generals demonstrated an uncommon ability to succeed on the battlefield in spite of considerable obstacles. Whether solving operational issues, developing technical innovations, or devising logistic solutions, these commanders transcended service-centric doctrine and loyalties in order to achieve their objectives. Are there common elements among their personal background, professional education, officer development, and operational experience that helps explain their success? This paper will examine two contemporary tactical airpower commanders, Lieutenant General Elwood "Pete" Quesada and *Generalfeldmarschall* Wolfram *Freiherr* von Richthofen, in an attempt to answer this important question.

Although this paper focuses on air force generals, any findings are relevant to all military services. In addition to the USAF, the US Army, Navy, and Marine Corps all strive to optimize recruitment, training, and professional development of their future leaders. They all use selection boards, officer development courses, and career planning pyramids to find, cultivate, and promote their officers. The US military today, as a volunteer force, enjoys the most professional and capable officer corps in history. To some extent, however, all branches still struggle with service-centric mindsets, adherence to parochial and obsolete doctrine, and resistance to new technologies that they see as a threat to either. Quesada and von Richthofen not only successfully overcame these issues, but they did so under wartime conditions.

In researching these men, this study draws heavily on primary source documents stored at the Air Force Historical Research Agency (AFHRA). When available, it uses official messages, general orders, personal interviews, and unit histories. Immediately

after World War II, former German commanders conducted several official air force historical studies regarding German operations during the war. These studies provide a rare insight into how the *Luftwaffe* viewed and conducted its *Blitzkrieg* operations. When necessary, this paper uses secondary and tertiary sources to fill in the gaps and provide a balanced perspective.

Using these sources, this paper will conduct a combination of qualitative and historical research. Looking at these generals in turn, it will explore their personal background, professional education, and operational experience. When possible, it focuses on their individual impact in an attempt to isolate personal characteristics or actions that seemed most effective. This paper will then comparatively analyze the two generals, focusing on external then internal factors, to determine if they share these key elements. Finally, while acknowledging the limited scope of this study, it will make an appropriate recommendation regarding any findings.

The ultimate goal is to provide those who conduct officer acquisition, training, and professional development with timeless criteria that will help them select and cultivate their future leaders. The human element in virtually any military operation remains both the most crucial and weakest link. Throughout history, some commanders have faced technologically and numerically superior forces, yet somehow emerged victorious. The US today is conducting overseas contingency operations in every corner of the world while tackling a financial crisis not seen since the Great Depression. Now more than ever, the nation demands military officers that have the ability, vision, and courage to lead the US through these tumultuous times.

Chapter 2

Lieutenant General Elwood "Pete" Quesada

I have nothing to offer but blood, toil, tears and sweat....You ask, what is our policy? I say it is to wage war by land, sea, and air. War with all our might and with all the strength God has given us, and to wage war against a monstrous tyranny never surpassed in the dark and lamentable catalogue of human crime. That is our policy. You ask, what is our aim? I can answer in one word. It is victory. Victory at all costs-Victory in spite of all terrors-Victory, however long and hard the road may be, for without victory there is no survival.

-- Sir Winston Churchill.

VICINITY OF ST. LO, FRANCE, 1 AUGUST 1944, 1015 HOURS. Allied forces rapidly advanced past St. Lo and IX Tactical Air Command (TAC) was struggling to keep up with the changing ground picture. Major General Elwood R. "Pete" Quesada, commander of IX TAC, grabbed Colonel Blair Garland, his signal officer, and headed to a forward unit for the latest intelligence. "Hop in the jeep, Garland," Quesada said, "We are going up to the 70th Wing and see how things are going." As soon as he arrived at the 70th Quesada walked up to the wing intelligence officer. Quesada inquired, "What's the situation?" "Well, sir, at 9 o'clock…," the Lieutenant Colonel began. "Goddammit, when I left the headquarters that was the situation," Quesada barked. "What is it now?"[1]

Now furious, Quesada stormed up to the 70th Wing Commander, Brigadier General James McCauley, who greeted him with open arms. "Everything is going great," McCauley said. Quesada repeated his question, "Well, what is the situation?" "At 9 o'clock…," McCauley began. Quesada went straight up in the air, "Goddammit, I bet my headquarters knows more about this than you do!" Grabbing the telephone, Quesada barked at the hapless operator, "Give me my headquarters!" The operator, thoroughly unseated, promptly connected Quesada to the quartermaster by accident. Quesada slammed the phone down. "Nothing works in this goddamn command, nothing! It's the

[1] Blair Garland, interview by Hugh Ahmann, 7 June 1982, transcript, K239.0512-1332 (Maxwell AFB, AL: USAF Historical Research Center, 1984), 148.

worst communication system I ever saw!" With that Quesada grabbed Colonel Gilbert Meyers, a hapless bystander, jumped in the jeep and thundered off to the front to see for himself. Abandoned by his commander and pretty sure he had just been fired, Garland borrowed another jeep and drove fifty-five miles back to headquarters where he packed his bags. "Well, that's the end of me," he thought to himself.[2]

Meanwhile, Quesada and Meyers drove up to Major General Charlie Gerhardt, 29th Infantry Division Commander. Quesada announced that he was driving ahead to Villebaudon, where the Second Armored Division was spearheading the advance.[3] "Mighty fine," Gerhardt replied, offering them a guide. "Hell, no," Quesada retorted, "I'm used to moving among the enemy. I'm an airman. I can find my way."[4] A few minutes later Quesada was weaving among the Sherman tanks at the front when they came upon a Tiger tank that had just punched in from the flanks.

"Say, that German tank there does not look like it's been knocked out," Quesada observed. He was right; just then an armor piercing shell slammed into Quesada's jeep and went right under his seat, taking out the axle. The jeep, now useless, collapsed to the ground. Quesada and Meyers dove headlong into the adjacent hedges for cover. After the coast was clear they crawled along a ditch then scurried back behind friendly lines. Quesada eventually made his way back to IX TAC headquarters and ran into Garland two days later. "You know, I have been thinking about this," Quesada said, apologizing in his own way. "You are the best goddamn signal officer I ever saw." With that Garland unpacked his bags; he later reflected that Quesada would "occasionally blow his top, and he would always come back and say he was sorry."[5] In a relentless quest to push IX TAC to the limit, Quesada's aggressive nature would occasionally get the better of him. This was war, however, and Quesada was not afraid to step on toes in order to get the job done.

---

[2] Garland, interview by Ahmann, K239.0512-1332, 149.
[3] Thomas Hughes, *Overlord: General Pete Quesada and the Triumph of Tactical Airpower in World War II* (New York, NY: The Free Press, 1995), 229.
[4] Joseph Ewing, 29, *Let's Go*, 112.
[5] Garland, interview by Ahmann, K239.0512-1332, 149.

Personal Background

Elwood Richard Quesada was born on 13 April 1904 in Washington DC; his father was a Spanish banker and his mother an Irish-American from New York City. In his own words, Elwood was "basically an immigrant."[6] Both of his parents were devout Catholics and raised Elwood accordingly. Unfortunately, they had a turbulent marriage as neither could agree on where to live. Although owning a residence in Washington as a part of his banking business, Elwood's father argued that the family should live in Spain. His mother, on the other hand, was concerned about bringing up children in Spain, considering it a backward country with inferior medical care. His parents divorced over this issue when he was just a child.[7]

In accordance with contemporary customs, Elwood, his older sister, and two older brothers stayed with their mother in Washington DC. On several occasions Elwood traveled to Spain and visited his father, considering him "a decent, God-fearing man with an abundance of Spanish pride, which was to a young boy, attractive in those days." Elwood's moral and religious upbringing was a mainstay that he embraced throughout his career and life.[8]

In both high school and college, Quesada showed a clear preference for athletics over academics. Although a self-professed "fair" student in high school, Quesada compensated for his academic indifference as a capable quarterback for the football team. He was also a member of the baseball, basketball, tennis, and track teams. When Quesada attended the University of Maryland in 1923 he became moderately well-known as their quarterback.[9]

When school was out for the summer, Quesada sometimes worked as a lifeguard at the Tidal Basin Bathing Beach in Washington. One day, while Quesada was rowing the lifeboat in the basin, Millard "Tiny" Harmon, a lieutenant in the Air Service, swam up and hung on. Quesada, in his admittedly "arrogant way…told him to get off the boat." Tiny had refereed some of Quesada's games and noted his aggressive yet competent

---

[6] John Frisbee, ed., *Makers of the United States Air Force* (Maxwell AFB, AL: Office of Air Force History, 1987), 178.
[7] Elwood Quesada, interview by Steve Long and Ralph Stevenson, 12 May 1975, transcript, K239.0512-838 (Maxwell AFB, AL: USAF Historical Research Center, 1984), 1.
[8] Quesada, interview by Long and Stevenson, K239.0512-838, 2.
[9] Quesada, interview by Long and Stevenson, K239.0512-838, 3-9.

nature; he just smiled back and asked, "What are you going to next year?" Quesada, looking askance at him, replied he was going back to the University of Maryland. Tiny countered with an offer to take him on an airplane ride, "Come on, and go with me to Brooks Field."[10] The offer intrigued Quesada and the next day he flew for the first of what would be many times at Bolling Field. It was love at first sight, thus marking a non-traditional beginning to an exemplary career.

When Quesada entered the military in the fall of 1924, he was an unlikely candidate to become a distinguished general. Quesada did not come from a military family nor did he attend a military academy. He did not share a sense of destiny and mission, which has driven so many other military leaders. In fact, it appears that timing and luck had more to do with his entry than anything else. Quesada entered the Air Service with few expectations and even fewer preconceptions. He held no preconceived notions of strategic airpower doctrine, nor was he concerned or likely even aware at the time of the Air Service's ongoing struggle for independence from the Army. Free of these intellectual and moral burdens, Quesada could simply apply his natural talent to the task at hand without worrying about its future implications for the new air arm.

Early Military Career

Two days after his demonstration flight with Tiny Harmon, Quesada was on his way to Brooks Field in San Antonio for initial flight training. From the beginning, Quesada's military career would prove truly unique. Soon after Quesada arrived at Brooks, he began playing as quarterback for the base football team. Unfortunately, one day Quesada broke his leg playing against the University of Texas and immediately fell behind in the training program.[11] As the holiday break approached, it did not seem Quesada would be in San Antonio long enough to greet the New Year. This is where First Lieutenant Nathan Twining, future Chairman of the Joint Chiefs of Staff, intervened to save what would have been a very short career. Twining sacrificed his holiday break and for the next two weeks flew with the barely-healed Quesada every day.[12] Quesada

[10] Quesada, interview by Long and Stevenson, K239.0512-838, 10-11.
[11] Frisbee, *Makers of the United States Air Force*, 178.
[12] Quesada, interview by Long and Stevenson, K239.0512-838, 13.

impressed Twining with his natural flying skill. When the holidays were over, Quesada had caught up with his classmates. Due to his broken leg, Quesada only flew eighty hours as opposed to the standard 100 training hours, but it was enough to graduate on time. Quesada and Twining remained friends as he, "was always grateful to Nate for keeping me in." This was an auspicious start to Quesada's career highlights his uncanny knack for forming important associates.[13]

Six months after graduating from primary flight school in February 1925, Quesada earned a slot in the pursuit training course, which he thoroughly enjoyed. Unfortunately, the air service soon released Quesada along with several other young pilots; this was common practice during the frugal interwar years. Quesada was mildly disappointed to leave the service in the fall of 1925, but he had gone to Texas mostly on a whim anyway. Over the next two years, Quesada flowed through a series of unique jobs: first trying his hand at baseball with the St. Louis Cardinals, then working with his older brother Buddy in his charter fishing business in Florida, and finally taking a job with the Criminal Investigation Division with the Treasury Department in Detroit.[14]

As interesting and diverse as these various occupations may have appeared at the time, none of them held Quesada's interest for very long. Quesada was in love with flying and there was no cure; in the spring of 1927, he resolved to return to the Air Service one way or another.[15] Timing was on his side this time as Congress, with broad political support, had recently passed the Air Corps Act of 1926. Aside from changing the name of the Air Service to the Air Corps, this act called for a "twofold increase in manpower and a net addition of 1,800 planes by 1932." Quesada quit his job, moved back to his mother's house in Washington DC, took the "Army Air Corps Competitive Examination," and was one of one hundred applicants competing for eighteen positions.[16]

Quesada made the cut and reentered active duty as an Army pilot in April 1927; his first assignment was in an engineering billet at Bolling Field. This relatively low-key position gave Quesada ample time to enjoy his newly reacquired passion. Bolling's mission was to provide air service for dignitaries in Washington, which meant that the

---

[13] Quesada, interview by Long and Stevenson, K239.0512-838, 13.
[14] Quesada, interview by Long and Stevenson, K239.0512-838, 25.
[15] Quesada, interview by Long and Stevenson, K239.0512-838, 26.
[16] John Shiner, *Foulois and the U.S. Army Air Corps, 1931-1935* (Washington, DC: Office of Air Force History, U.S. Air Force, 1984), 31-33, and Hughes, *Overlord*, 31.

base maintained a diverse array of aircraft. Quesada along with his naturally adventurous spirit took great advantage of this opportunity and he flew everything he could get his hands on as often as possible. His flying skills continued to improve dramatically.

Aircraft and flying techniques were still new in the 1920 and crashes were common. Quesada did seem to have more than his share, however; he would crash eight times throughout his career.[17] He actually was an outstanding pilot and probably crashed more often because he was always in the air. In any case, he learned from his experiences, both good and bad. His rapid improvement in flying skills while at Bolling Field did not go unnoticed. Captain Ira Eaker, already one of the best-known pilots in the service, remarked Quesada showed "signs of being a very good pilot."[18] Eaker was not alone as Quesada's love of flying and the mission at Bolling conspired to bring him in contact with current and future Air Corps leadership.[19]

Quesada particularly enjoyed the Loening Amphibian, a rather rare and difficult aircraft, which few pilots could or would fly. Once again, Quesada's adventurous nature would pay great dividends. In May 1928, the German embassy asked the Air Corps for help in recovery of the "Bremen," a German aircraft stranded on Greeley Island off the Labrador coast. Major General James Fechet, chief of the Air Corps, leapt at the opportunity for favorable press promoting the revitalized air arm and hurriedly formed an expedition using the two Loenings at Bolling.[20]

Fechet departed with both aircraft and four other pilots on 11 May, but one of the pilots fell ill at the first stopover and he needed a replacement. Capt Eaker, one of the pilots chosen for the mission, reminded Fechet that Quesada was an experienced amphibian pilot and suggested him as a replacement.[21] Fechet agreed. Quesada flew up the next day and took his place in the lead aircraft alongside Fechet himself. The trip was a week-long adventure in which both aircraft were almost lost in tremendously sour

---

[17] Hughes, *Overlord*, 29.
[18] Ira Eaker, interview by Hugh Ahmann, 10 February 1975, transcript, K239.0512-829 (Maxwell AFB, AL: USAF Historical Research Center, 1982), 155.
[19] Quesada, interview by Long and Stevenson, K239.0512-838, 29.
[20] Quesada, interview by Long and Stevenson, K239.0512-838, 35.
[21] James Parton, *"Air Force Spoken Here:" General Ira Eaker and the Command of the Air* (Bethesda, MD: Adler and Adler, 1986), 69.

weather, but in the end, they successfully reached the Germans with much fanfare. Fechet was very pleased with the positive press the event generated for the Air Corps.[22]

For Quesada's part, the Bremen rescue operation was his official introduction into the power circles of the Army. An incredibly rare opportunity especially for a new lieutenant, Quesada had spent several days alone with the highest-ranking member of the Air Corps, something almost inconceivable in the modern military. Quesada performed extremely well during the Bremen ordeal and from that point on Fechet, according to Ira Eaker, developed "a marked preference for the young Quesada."[23] In July 1928 Fechet made Quesada his flying aide.[24]

Quesada's good fortune continued unabated. Later that year Eaker set up the *Question Mark* mission in an attempt to prove that aerial refueling was feasible. Although Eaker already had an affinity for the young pilot, it helped that Quesada worked for Fechet: the man whose support Eaker needed. Eaker invited both Quesada and another up-and-coming officer, Carl "Tooey" Spaatz, to join in on the adventure.[25] Both pilots eagerly agreed. Eaker later remarked that Quesada, a Roman Catholic, prayed at his bedside the night before departing on the first night of the flight west, "He did not allow our presence to prevent him from showing his religious convictions. I know this courage in the youngster impressed all of us very much."[26]

Fechet, always on the lookout for favorable press for the Air Service, fully supported the mission.[27] On 1 January 1929, the *Question Mark* lifted off for what would be an 11,000 mile flight over 150 hours, 40 minutes, and 15 seconds; this shattered all previous records for distance and endurance.[28] They would have gone even longer, but near the end Quesada commented, "One motor sounds all right, but doesn't look so good.

---

[22] Quesada, interview by Long and Stevenson, K239.0512-838, 50.
[23] Hughes, *Overlord*, 34.
[24] Frisbee, *Makers of the United States Air Force*, 180.
[25] Ira Eaker, interview by Hugh Ahmann, 10 February 1975, transcript, K239.0512-829 (Maxwell AFB, AL: USAF Historical Research Center, 1982) 155.
[26] Bill Gilbert, *Airpower: Heroes and Heroism in American Flight Missions, 1916 to Today* (New York, NY: Citadel Press, 2003), 34.
[27] Quesada Interview 1988, 3.
[28] B. Chance Saltzman and Thomas Searle, *Introduction to the United States Air Force* (Maxwell AFB, AL: Air University Press, 2001), 10.

It is slowing up. We can't trust our ears anymore. It looks as though the human being would outlast the motors. They are going fast."[29]

While still in flight, Quesada penned a letter to his mother and referred to Charles Lindbergh's famous 1927 transoceanic flight. Showing his lighter side he wrote, "Now I will have something to bounce off Lindy whenever he boasts too much about that little hop he made."[30] The flight gained world renown and after landing, President Coolidge awarded the pilots the Distinguished Flying Cross. This fame followed Quesada and the other pilots into World War II.[31]

Quesada's exploits continued through the interwar years. Through a combination of his reputation, flying skill, and luck, he continued to fill several billets as an aide to several important leaders. After Fechet retired, Major General Benjamin Foulois, his replacement, assigned Quesada to Cuba as an attaché and pilot for the US Ambassador, Harry Guggenheim.[32] Guggenheim traveled often and did not mind flying in austere conditions. The aggressive Quesada gained valuable experience flying, "in a hell of a lot of lousy weather." After two "marvelous" years, Foulois brought Quesada back to the states and made him the personal pilot for the Assistant Secretary of War for Air, Trubee Davison.[33]

At the time, the Air Corps was struggling for funding along with the rest of the war department. For example, Foulois once remarked that the administration's funding allocation would only buy 375 planes; the air services had projected 466 would either be worn out or destroyed by 30 June 1934. Davison agreed, adding the Air Corps would be 389 aircraft short of the 1,800 "serviceable" planes authorized in the administration's budget proposal.[34] Quesada had just started working for Davison when the Depression-era government reduction program cut his position.[35] On a positive note, for the next sixty days Davison and Quesada visited every major air-arm installation in a "sort of farewell tour," giving Quesada an unprecedented amount of visibility throughout the Air

---

[29] H. H. Windsor, ed., "The Flight of the ?," *Popular Mechanics,* Vol 51, No 3, March 1929, 355.
[30] Gilbert, *Airpower*, 38.
[31] Quesada Interview 1988, 3
[32] Quesada, interview by Long and Stevenson, K239.0512-838, 60.
[33] Quesada Interview 1988, 63.
[34] John Shiner, *Foulois and the US Army Air Corps, 1931-1935* (Washington, DC: Office of Air Force History, 1983), 114.
[35] Shiner, *Foulois and the US Army Air Corps,* 81-82.

Service.[36] After Davison left, Quesada was ready for a change of pace. Hoping to steer away from aide duty and back to a more traditional career, Quesada attended an advanced navigation school. During school, Quesada noted he was both "a student and instructor…because I had a lot more experience on instrument flying than most."[37]

At the same time Quesada was finishing his class, in a dramatic stroke President Roosevelt canceled the "corrupt" air-mail civilian contracts. Roosevelt asked if the Air Corps could step in and save the day; Foulois leaped at the opportunity."[38] On 15 February 1934, Quesada along with 268 pilots, 340 enlisted men, and 146 planes were positioned throughout the country to deliver the mail.[39] Unfortunately, as there was significant pressure to get the job done the Air Service experienced an atrocious number of weather-related accidents. Few of the young pilots had much experience with adverse flying conditions. President Roosevelt, already under Congressional scrutiny for his New Deal programs, wrote Secretary of War George Dern a letter stating, "The continuation of the deaths in the Army Air Corps must stop."[40] Something had to be done fast in order to salvage the Air Service's reputation.

In a valiant attempt to generate some much-needed positive press, Foulois ordered a B-10 bomber laden with mail from California to New York in an attempt to break the transcontinental speed record. Quesada once again happened to be at the right place at the right time. On 8 May the aircraft departed, but the pilot became ill over Indiana and landed in Cleveland. Quesada, by chance in Cleveland at the time, joined the group gathering around the aircraft. None of them knew how to fly the new bomber, although they noted Quesada had the most diverse experience of the lot. The group of pilots agreed Quesada should fly the B-10 on to New York. Foulois noticeably relaxed when hearing of the solution. "Quesada," he told an aide, "can fly anything."[41]

Quesada and his mechanic boarded the aircraft and flew on to New York, finishing the trip in a total of fourteen hours and eight minutes. This was forty-nine minutes short of Eddie Rickenbacker's record, which he set as a commercial airline pilot

[36] Hughes, *Overlord*, 39.
[37] Quesada, interview by Long and Stevenson, K239.0512-838, 87.
[38] Quesada, interview by Long and Stevenson, K239.0512-838, 87.
[39] Hughes, *Overlord*, 41.
[40] Shiner, *Foulois and the U.S. Army Air Corps*, 144..
[41] Hughes, *Overlord*, 44. Foulois memoirs? Baker Board AFHRC?

flying a modified Douglas DC-2. Many Air Corps pilots, still "fuming" over Rickenbacker's comment that their high mail-delivery accident rate was tantamount to "legalized murder," let it be known that Rickenbacker "had made three fewer stops and had flown 279 fewer miles on his flight."[42] Unfortunately, nothing could save the Air Corps' valiant attempt at mail delivery, as the dismal safety record terminated the program in May. It took Foulois' career along with it. In a report to the Baker Board, convened to conduct an investigation that would terminate the Air Corps' mail-delivery attempt, Dern remarked, "It appears that the experience of the Army Air Corps in carrying the mail has raised doubts about the general efficiency of the Army Air Force."[43] For his part, however, Quesada clearly benefited once again from his initiative and good fortune.

Through the next year Quesada moved through several flying aide billets for important figures such as Hugh Johnson, administrator of the New Deal's National Recovery Administration, and Secretary of War Dern. Most important was his time with then Colonel George C. Marshall, then Commandant of the Infantry School. Quesada was surprised to note that Marshall, although an infantryman to the core, "nonetheless exhibited none of the knee-jerk service parochialism so common to the period."[44] Later in life, Quesada reflected that Marshall "was the fairest man in the service, the biggest man the service has ever developed, certainly in the last century."[45] Marshall had nothing against airpower. On the contrary, he truly enjoyed personally flying with Quesada and spent more time in the cockpit at Benning than he did at any other time in his career.

While flying Marshall to Army bases throughout the US, Quesada gained an appreciation for the sacrifices the Army endured in order to support a rapidly growing Air Corps. Buildings had fallen into disrepair, equipment was shockingly obsolete, and armories still had many World War I era weapons. Although funding was already tight during the interwar years, the Air Corps was drawing an increasing share of the total budget; this is apparent when reviewing the five-year program authorized under the Air Corps Act of 1926. According to the War Department, in 1926 the Air Corps received

---

[42] Jeffrey Underwood, *The Wings of Democracy* (College Station, TX: Texas A & M University Press, 1991), 45.
[43] Shiner, *Foulois and the U.S. Army Air Corps*, 194.
[44] Hughes, *Overlord*, 47.
[45] Quesada, interview by Long and Stevenson, K239.0512-838, 102 and 262.

12.7% of the $267 million budget. It steadily climbed over the next five years to 21% in 1932 when the budget peaked at $345 million. The total budget decreased to a low of $243 million during the next three years as part of President Roosevelt's New Deal, but climbed once again starting in 1936. By 1939, the total war budget was $480 million and the Air Corps' portion climbed along with it to 28.1%.[46] At a time when aircraft numbers grew from 903 to 1646, the Infantry had not purchased even a single rifle.[47]

Quesada took these observations to heart. The Army was suffering through deplorable conditions while at the same time Quesada's pilot colleagues complained that the Air Corps was not getting the recognition it deserved. There were too many Air Corps officers such as Eaker, who Quesada felt "was obsessed with the Air Force and obsessed with them getting to be a separate Air Force. He was very much of the opinion that we were unappreciated, that the Army didn't like us. He was paranoid."[48]

From the Army's point of view, the Air Corps was behaving like a spoiled child. Pilots seemed to have no idea that the Army was enduring substantial cuts in order to fund the Air Corps' burgeoning romance with the airplane. Quesada, who was never an indoctrinated airpower zealot, fully understood and perhaps somewhat identified with the average Army line officer's weariness with pilot complaints. During his time with Marshall, Quesada gained a rare insight that would have been nearly impossible without this excellent opportunity.[49]

Although this assignment lasted only three months, it had a profound effect on Quesada. In addition to appreciating the relationship between the Army and Air Corps, Quesada gained respect from the man who literally ran the American war effort in World War II. This would pay dividends on more than one future occasion, as Marshall would remember and later support Quesada's progression. Presaging another beneficial relationship, Quesada also met Omar Bradley while at Fort Benning. A few years down the road, Bradley and Quesada would forge what would become one of the closest working relationships between ground and air generals in the history of the US military.

---

[46] "Relation of Air Corps Expenditures to Total War Department (Military) Expenditures, 1925-1938," graph, 167.6-5 (Maxwell AFB, AL: USAF Historical Research Center, 1939).
[47] Hughes, *Overlord*, 48.
[48] Quesada Interview 1988, 3.
[49] Hughes, *Overlord*, 48.

After Benning, Quesada returned to Washington and for a short time served as air attaché to General Headquarters Air Force Commander Major General Frank Andrews.

Quesada's early military career reads like a novel. At first glance, it appears he simply was always in the right place at the right time. Although luck did indeed play a great role in Quesada's early adventures in the Air Corps, his positive, aggressive attitude combined with his natural flying talent deserves the lion's share of the credit. Luck may initially have opened the door for Quesada, but from that point on his determination and skill propelled him to otherwise unattainable heights. He never turned down a challenge and volunteered for every flying opportunity he could; the leadership quickly found Quesada a "go to" guy. In situations such as the Bremen rescue, Air Corps air-mail episode, and B-10 record-flight, air leaders with a problem turned to Quesada because they knew he could get the job done. This important personal trait helped distinguish Quesada as a potential air commander.

Professional Development

In the spring of 1935 Quesada finally took a break from air attaché duty and attended the Air Corps Tactical School (ACTS) in Montgomery, Alabama. While at ACTS, Quesada learned that strategic bombardment theory drove most of the curriculum. Although authors of the 1926 Tactical School text noted, "because of lack of experience any statement on the influence of strategic air operations on future warfare was a matter of conjecture," this did not prevent ACTS from embracing the fledgling theory.[50] By 1930, "the concept of the primacy of bombardment was firmly established at the Tactical School," as the authors of that year's school text, "left no doubt that in their opinion pursuit could not guarantee immunity from hostile air attack, and consequently that the only way to gain control of the air was through a determined bomber offensive."[51]

Brigadier General William Mitchell probably "had the most decided influence" on ACTS. Mitchell developed his idea that, "airplane bombing…will have a great effect on all the operations" from speaking with legendary figures such as Marshal of the Royal

[50] Robert Finney, *History of the Air Corps Tactical School, 1920-1940,* USAF Historical Study 100 (Maxwell AFB, AL: USAF Historical Division, Air University, 1955), 30.
[51] Finney, *History of the Air Corps Tactical School,* 31.

Air Force Hugh Trenchard.[52] Mitchell claimed, "The time honored method of winning wars, by the defeat of an enemy's armies in the field had lost its significance in the face of a strategic revolution. Wars carried on through the air, promised to make war briefer, more humane, and less expensive because industries once destroyed could not be replaced in the duration of modern wars."[53]

In the early 1920s during a trip to Italy, Mitchell likely met and exchanged ideas with Douhet, one of the first air theoreticians. Although Mitchell "never alluded to Douhet's possible influence on his thinking," the concept of the primacy of bombing is central to Douhet's theory in *Command of the Air*.[54] Douhet claimed, "aerial warfare admits of no defense, only offense. We must therefore resign ourselves to the offensive the enemy inflicts upon us, while striving to put all our resources to work to inflict even heavier ones upon him."[55] Douhet thus recommended building an "Independent Air Force" which can first "possess strength enough to conquer the command of the air" then "crush the material and moral resistance of the enemy."[56]

By 1933, an early English translation of Douhet's ideas reached ACTS and American theorists began citing the "Italian authority…as further evidence of the soundness of their views." Although ACTS never fully embraced Douhet as his "advocacy of mass area bombing at night was at variance with the…concept of daylight precision bombardment of pinpoint targets," his general concepts of airpower definitely, "had an influence on the Tactical School." In 1933 Major Donald Wilson, an instructor at the school, considered Douhet's theory when preparing the Air Force course. Wilson reasoned, "Far more specific targets in the interior of an enemy's country should be designated as the objectives for bomber operations."[57]

During the first session of the Air Force course in 1935, Major Harold George explained how the new method of warfare, "as a relatively untried weapon," had "altered the nature" of war.[58] "We are not concerned with fighting the last war," George began,

---

[52] Finney, *History of the Air Corps Tactical School*, 3 & 27.
[53] William Mitchell, "Aeronautical Era," *Saturday Evening Post*, 20 December 1924, 3.
[54] David Jablonsky, *Roots of Strategy* (Mechanicsburg, PA: Stackpole Books, 1999), 520
[55] Giulio Douhet, *The Command of the Air*, trans. Dino Ferrari (1942; new imprint, Washington, DC: Air Force History and Museums Program, 1998), 55.
[56] Douhet, *The Command of the Air*, 103.
[57] Finney, *History of the Air Corps Tactical School*, 27-31.
[58] Finney, *History of the Air Corps Tactical School*, 28.

"that was done eighteen years ago. We are concerned, however, in determining how airpower shall be employed in the next war and what constitutes the principles governing its employment." He also proposed that the, "advent of airpower brought into existence a method for prosecution of war which has revolutionized the art and given to air forces a strategic objective of their own independent of either land or naval forces which can, in itself, accomplish the purpose of war."[59]

Thus began Quesada's year of attempted indoctrination, with ACTS fully espousing independent strategic bombing as the holy grail of the Air Corps. ACTS considered fighter escort, air superiority, and close air support for ground troops ancillary missions. Bombers could do it all, but would only need to prioritize the one mission worth doing: strategic bombardment. One of the only dissidents teaching at ACTS was Claire Chennault, who criticized the Air Corps' romance with its self-declared singular mission. Chennault, whose unorthodox behavior somewhat diminished his argument, pleaded for a more balanced approach to aerial warfare and promoted fighter employment in tactical aviation.

In 1934, Chennault's Air Corps career ground to an abrupt halt when, as an ACTS instructor, he traveled to Washington to testify before the Howell committee. Clark Howell, the Atlanta publisher and Chairman of the Federal Aviation Commission, was conducting an investigation into the developments of airpower. For his briefing topic, Chennault chose the maneuvers of 1934, a "fiasco of trench warfare run by General C. E. Kilbourne of the War Department general staff."[60] During the maneuvers, which simulated an amphibious landing on a hostile coast, Kilbourne canceled interdiction air missions that would have effectively targeted enemy ships and supply lines. He instead mandated all aircraft bomb the attackers once they were engaged in trench warfare, which Chennault remarked, "proved as effective as bean blowers against an armadillo."[61]

General Kilbourne showed up at the Howe commission, unannounced, and defended his air tactic as "the only possible method of bringing the two opposing forces into contact." Chennault could not pass up the opportunity and responded, "General, if

---

[59] Finney, *History of the Air Corps Tactical School*, 28.
[60] Claire Chennault, *Way of a Fighter: The Memoirs of Claire Lee Chennault* (Tucson, AZ: J Thorvardson, 1991), 18.
[61] Chennault, *Way of a Fighter*, 19.

that is the best you can do in the way of planning for future wars, perhaps it is time for the Air Corps to take over." In one stroke, Chennault's active-duty "struggle for airpower was brief,…but decisive." A few weeks later, his name "was permanently removed from the list of officers scheduled to attend Command and General Staff School (CGSS) at Fort Leavenworth, Kansas." The ACTS hierarchy as well as the Air Corps marginalized him; however, fighter operations in the China-Burma-India Theater would later vindicate Chennault and validate his ideas.[62]

Although Quesada was more politically sensitive than Chennault, he likewise maintained a balanced view of independent bombing theory and recognized the primacy of other missions such as air interdiction. His response to dramatic claims on both sides of the argument was more subdued. For example, Quesada felt strategic bombing, "was overstated then, but it didn't result in me getting in any debate at Maxwell. I did not become a jealous advocate of it either way."[63] Unlike his fellow classmates, who wrote theses almost exclusively on bomber theory, Quesada instead exercised broader thinking by addressing the growing turmoil in Europe.

After Quesada finished his year at Maxwell, he moved to Fort Leavenworth for another year of military schooling, this time at the CGSS. The Leavenworth school was a watershed in any officer's career and Quesada managed a slot through the influence of his previous boss, General Andrews. There were 237 in his class; 35 were from the Air Corps.[64] Just as the Air Corps was air-centric, CGSS provided a traditional Army education. CGSS only allotted two days in the curriculum for airpower, and both focused on tactical support of ground forces. Nevertheless, Quesada upheld his balanced view of operations between air and ground forces and decided, "future war will require all sorts of arrangements between the air and ground, and the two will have to work closer than a lot of people think or want."[65]

Quesada also spent time with several army officers who would later gain great fame during the war. Maurice Rose, who would later earn the accolade "top armored commander in the Army" from his corps commander, spent a fair amount of off-duty

---

[62] Chennault, *Way of a Fighter*, 18-19.
[63] Hughes, *Overlord*, 58.
[64] Parton, *"Air Force Spoken Here,"* 102.
[65] Hughes, *Overlord*, 63.

time with Quesada and "exchanged ideas about the value of close air support."[66] Quesada and Rose also worked together in class and once solved a tactical problem where an armored column, separated from the main body, was under attack. Their interaction confirmed Quesada's notion of airpower employment. They spent much of their off-duty time discussing air-ground cooperation.

Although Quesada's thinking may not have been popular among senior airmen at the time, his convictions would prove accurate over the next few years. Although Quesada was academically somewhere in the middle of both ACTS and CGSS, his unique military service up to this point combined with the broad lessons he took from school produced an officer that came to his own convictions about how airpower should be employed. In addition, Quesada's time as an aide likely gave him political sensitivities that others lacked. Although he would agree with most of Chennault's ideas on airpower, Quesada likely understood that burning bridges rarely helped his case. Quesada left CGSS in the spring of 1937 and looked forward to going somewhere he could apply these ideas.

Early Operational Assignments

Quesada's first assignment after school was in an operational billet with the First Bombardment Squadron, located at Mitchel Field in Long Island, New York. Quesada, now a captain, was "terribly happy being at Mitchel Field," although he was also used to working alone as a flying aide and would have to make some personal adjustments.[67] His initiative and independent nature, clearly beneficial in his previous jobs, at times was a hindrance when working as part of a team. Quesada's commander Major Duncan noted on his efficiency report that he was "a very capable officer with a wide range of varied experience," and that "due to much of his service having been on duties where he worked independently or directly in charge of the activity, he is used to acting on his own decisions. Increased service in tactical units is believed desired to develop a greater sense of cooperation and teamwork."[68] Highlighting Quesada's independent nature,

[66] Edward Coffman, *The Regulars* (Cambridge, MA: Belknap Press of Harvard University, 2004), 238-239.
[67] Quesada, interview by Long and Stevenson, K239.0512-838, 97.
[68] Hughes, *Overlord*, 64.

Duncan's evaluation predicted some interpersonal problems that Quesada would work through during his early years of command.

Quesada left Mitchel Field in June 1938 on a special assignment with the Army diplomatic corps in Buenos Aires, Argentina. Along with Martin B-10s and several fighter aircraft, Argentina had purchased the production rights to Wright Whirlwind engines and needed help bringing together all these complex elements of the larger buy. Quesada forged a key relationship with his supervisor, Major Joe Cannon, who would later become an Army Air Forces major general during the invasion of Italy; Quesada would seek his advice on tactical fighter operations in the months leading up to the invasion of Normandy. For the next six months Quesada helped "the Argentines develop a maintenance system, a supply system, a blind-flying system, helped them to be able to produce operations order and things like that."[69] Since the Argentines are "a quite proud people and at times most very sensitive," Quesada had the opportunity to apply his diplomatic skills.[70]

After Argentina, Henry "Hap" Arnold ordered Quesada to Washington for a position as head of the Foreign Liaison and promoted him to major on the spot. Quesada was reluctant to be back in a staff environment, but he made the most of it. His new position was not well defined and Arnold left him alone to do the job as he saw fit. America's future European allies were gearing up for war, Washington was a flurry of activity. Quesada was in a good position to see this, and not all of it was pleasant.

Although they classified their actual production rates, by 1939 the Germans had built a substantial air force and the US as well as the rest of Europe was justifiably concerned. The Condor Legion's support of the Nationalists during the Spanish Civil War and Germany's *Blitzkrieg* through Poland heralded the *Luftwaffe's* arrival. In preparation for possible war, Arnold's staff was busy predicting Germany's production rates versus Britain and France. British capacity was higher than Germany's through early 1939, but by October, Germany would match the British at around 800 aircraft built monthly. US predictions then showed Germany leaving the limited British production rates in the dust. By January 1940, the Germans could theoretically build 2000 aircraft

[69] Quesada, interview by Long and Stevenson, K239.0512-838, 97.
[70] Quesada, interview by Long and Stevenson, K239.0512-838, 97.

monthly, compared to 900 for the British. Projections for September showed Germany building 4,700 aircraft to Britain's 1350; this would also be France's best month at a meager 700.[71]

Arnold used flawed statistics such as these to justify broad Air Corps support of the British. When Arnold "barged off to England," he took Quesada along and together they "had a whole book of things that we were supposed to bring up on the agenda and have done."[72] On one of the trips they visited some Eagle Squadrons, which contained Americans who volunteered to fly for the RAF. Arnold noted the British had some trouble with the Americans: "too many prima donnas."[73] Arnold, with Quesada assisting, reached several agreements on Air Corps and RAF cooperation. Quesada was at the nexus of this activity and "set in motion many of the programs that flowed from the agreement." This included transferring aircraft to Great Britain, training RAF pilots in Air Corps schools, and in general "arranging for people to administer the Air Corps' portion of the Lend-Lease plan.[74] Quesada was gaining valuable insight into the workings of the Air Corps by working closely with its chief.

Over the next few years, Quesada immersed himself in the Air Corps' effort to maintain its own growth in spite of the growing demand for aircraft overseas. After the Germans began bombing London in the Battle of Britain, President Roosevelt ordered the Air Corps production cycle reduced by 8,586 aircraft and instead directed aviation manufacturers to give priority to British orders. Arnold, along with the rest of the Air Corps, was not pleased and narrowly avoided open defiance; he slowed implementation of Roosevelt's policy by manipulating the already considerable bureaucracy within the procurement process. Quesada often found himself stuck between the competing interests of Roosevelt and Arnold; he had to walk a thin line between the two. Quesada apparently succeeded, as his supervisor Colonel Robert Candee called him "a splendid

[71] Air Corps Information Division, *Comparative Airpower of Leading Nations*, "Monthly Production Capacity: European Airpowers," graph, 19 January 1940, 145.91-135 (Maxwell AFB, AL: USAF Historical Research Center, 1940)
[72] Quesada, interview by Long and Stevenson, K239.0512-838, 99.
[73] Henry Arnold, *Global Mission* (New York, NY: Harper & Brothers, 1949), 219.
[74] Frisbee, *Makers of the United States Air Force*, 184.

officer of fine character and delightful personality…is loyal, versatile, zealous, industrious, persistent, and impulsive."[75]

Although the diplomatic aspect of his assignment was certainly useful, Quesada still yearned for an operational assignment. Finally, in the summer of 1941, the Air Corps faced an acute shortage of lieutenant colonels and colonels; Quesada had his chance to command. That July, Arnold gave Quesada command of the Thirty-third Fighter Group at Mitchel Field. Quesada was thoroughly enjoying his time in command when the Japanese attacked Pearl Harbor.[76]

On 7 December 1941, the US was finally shocked into action. As a defensive measure in case the Germans also attacked the US, politicians and military leaders ordered a defense of the eastern seaboard. Quesada's group deployed to Philadelphia, where it served as the city's air defense force alongside the Navy and Coast Guard's defense of the waterline to the east. As is often common during knee-jerk reactions following a traumatic event, the somewhat paranoid Coast Artillery spotlights highlighted any and every aircraft in the sky. Quesada was concerned about the spotlights blinding his pilots. He argued to the local artillery commander, Brigadier General Sanderford Jarman, that he should change the searchlight protocols before they caused an accident[77]

Jarman ignored Quesada's advice. As fate would have it, in early June "they turned a searchlight on a young kid in a P-40, who had very little flying time," and as he was, "coming in to land…cracked up."[78] Quesada was infuriated by this preventable accident. He later acknowledged that having to write the next of kin and inform them of the senseless loss of their son, "was the hardest thing I ever did during the whole war."[79] Partly because of his anger, but also characteristic of his somewhat disdainful nature, Quesada issued a written order three days after the accident banning the searchlights. "Largely my own fault," Quesada later admitted, "I got into a hell of a jam down there." His order stated, "German airplanes can't even get across the English Channel, so we shouldn't worry about German airplanes getting across the Atlantic Ocean."[80]

---

[75] Hughes, *Overlord*, 72-73.
[76] Quesada, interview by Long and Stevenson, K239.0512-838, 101.
[77] Frisbee, *Makers of the United States Air Force*, 184-185
[78] Quesada, interview by Long and Stevenson, K239.0512-838, 100.
[79] Hughes, *Overlord*, 80.
[80] Quesada, interview by Long and Stevenson, K239.0512-838, 102.

Quesada's order to Coastal Artillery Command, however, was an infringement on Jarman's command authority. Jarman sought to court martial the arrogant major. News of the accusation reached Chief of Staff George Marshall, who sent his own inspector-general to investigate. The investigator concluded that although Quesada did act in haste, Jarman was also at fault in his improper use of the searchlights. Making it clear that he had better things to focus on, Marshall rebuked both officers and closed the matter.[81]

Although Quesada occasionally showed more initiative than the situation warranted, senior leaders took note of his enthusiasm. Marshall, who knew Quesada as a "bright, energetic officer," understood that the imminent war required young leaders with stamina.[82] The future, he would constantly remind his own staff, "is not a game for the unimaginative plodder."[83] Marshall later reflected, "It took a great deal of vigor in order to lead the mobilization of this vast Army which we were starting to build up."[84] Only 38 years old, Quesada would be one of these officers. General Arnold quickly moved him through the next three ranks to brigadier general by the fall of 1942.[85]

Cutting Teeth in Operation TORCH

Brigadier General Quesada took command of the 1st Air Defense Wing (ADW) on 12 December 1942. The 1st ADW, originally located at Mitchel Field, New York, set sail for North Africa one month later on 13 January 1943. Quartered as a passenger on the SS *Ancon*, Quesada saw the Battle for the Atlantic first-hand; after a short chase, on 26 January a destroyer sunk a submarine one mile off the *Ancon*'s port beam. Quesada and the rest of his wing disembarked at Mers El Kabir, Algeria, on 27 January 1943. The port city was a portrait of chaos as the Allies were arriving in droves. Quesada and his wing walked mostly uphill for an hour before finding trucks that eventually took them to Oran station. After a four hour wait and another five mile walk, they arrived at the bivouac

[81] Frisbee, *Makers of the United States Air Force*, 185.
[82] Hughes, *Overlord*, 81.
[83] Jack Uldrich, *Soldier, Statesman, Peacemaker: Leadership Lessons from George C. Marshall* (New York, NY: AMACOM, 2005), 159.
[84] George C. Marshall, *George C. Marshall: Interviews and Reminisces for Forrest C. Pogue* (Lexington, Virginia: George C. Marshall Research Foundation, 1991), 477.
[85] Quesada, interview by Long and Stevenson, K239.0512-838, 103

area, "thoroughly exhausted and hungry."[86] Still, they were fortunate; the Battle of the Atlantic culminated that spring, with U-boats sinking 627,000 tons of merchant shipping. In March, forty German submarines attacked convoy SC122 and HX1229, "sinking twenty-one vessels for the loss of one U-boat." At least Quesada and his men made it: many others had not.[87]

In a way, Quesada was representative of the collective US military effort at the time: young, capable, but inexperienced in combat. The US Army Air Forces (USAAF) arrived in the Middle East none too soon as it "was probably the lowest ebb of British fortunes in the theater."[88] The British had been fighting the "accordion war," back and forth with the Germans for the past two years, and desperately needed American assistance to tip the balance in their favor.[89] Still, when the Allies planned Operation TORCH for 8 November 1942, the British were combat hardened and the US was not. They were about to learn some hard lessons in North Africa at places such as Kasserine Pass. Similarly, Quesada's experience in North Africa would take a talented but arrogant young officer and forge a mature general ready for increased responsibility.

The USAAF would face many challenges during desert operations in North Africa. First, the air arm's strategic bombardment theory, much stressed during ACTS, would have to wait until 1944; there was neither industry nor infrastructure in North Africa worth targeting. Second, USAAF aircraft were ill-suited for the austere desert operations, with poor landing fields causing such severe damage to aircraft that at one point "all activities, including flying, were severely curtailed." Finally and most important, command and control issues between the British and Americans were hindering operational success and had to be resolved.[90]

At the Casablanca conference in January 1943, the Allies decided to reorganize the command structure. General Bernard Montgomery, "who witnessed the superior

---

[86] War Diary of 62nd Fighter Wing, 12 December 1942, WG-62-HI (Maxwell AFB, AL: USAF Historical Research Center, 1942)
[87] Geoffrey Parker, ed., *The Cambridge History of Warfare* (New York, NY: Cambridge University Press, 2005), 343-344.
[88] Harry Coles, *Ninth Air Force Participation in the Desert Campaign to 23 January 1943*, Army Air Forces Historical Study 30 (Maxwell AFB, AL: USAF Historical Division, Air University, 1945), 1.
[89] Coles, *Ninth Air Force Participation in the Desert Campaign*, 1.
[90] Unit History, 52nd Fighter Group, April 1943, GP-52-SU-RE-D, AFHRC, 74; Craven and Cate, II, 295.

effectiveness of unified air control in tactical air support operations," insisted Anglo-American contingent in North Africa similarly centralize their combined operations.[91] Tooey Spaatz, Northwest African Air Forces commander, set up a new air command structure. In mid-March, he convened all his general officers to work out the new assignments. Quesada was still young and his immature and somewhat arrogant personality occasionally got the better of him; it would now cause some friction, yet at the same time would also have some unexpected positive effects.

The Americans argued that their superior numbers indicated that they should take the senior positions. The British alternatively argued that they were the more experienced force and that they should therefore command these positions. At this point Quesada jumped in, "Let's examine the experience that the British say they have," Quesada intervened, "The only precise way that I know (of) measuring is referring back to Dunkirk, Singapore, Crete, and Greece." Several jaws dropped. Spaatz quickly defused the tense situation with "Take it easy Pete, that's all right."[92]

Quesada's outburst had two ramifications. First, he altered Maori Coningham's opinion of him. Coningham, who would soon take command of the Northwest African Tactical Air Force, previously held disdain for Quesada, considering him a "double-barrel jerk."[93] He also, however, had "tremendous dislike of…the leadership that the British Army had displayed" and "applauded warmly" at Quesada's comment.[94] Coningham also appreciated the young general's candor. Quesada later recalled that from this point on they "became everlasting friends."[95] Second, Spaatz realized that Quesada needed mentoring from a senior officer; the next time he made an abrupt comment it might not work out so well for him.

As part of the reorganization, Spaatz named Air Vice Marshal Hugh Lloyd the Northwest African Coastal Air Force (NACAF) commander. NACAF was responsible for "the air defense of North Africa, air-sea reconnaissance, anti-submarine operations,

---

[91] Haywood Hansell, *The Air Plan that Defeated Hitler* (Atlanta, GA: Higgins-McArthur, 1972), 150-151.
[92] Quesada, interview by Long and Stevenson, K239.0512-838, 117.
[93] Quesada, interview by Long and Stevenson, K239.0512-838, 117.
[94] Vincent Orange, *Coningham: A Biography of Air Marshal Sir Arthur Coningham* (Washington, DC: Center for Air Force History, 1992), 131.
[95] Quesada, interview by Long and Stevenson, K239.0512-838, 117.

and the protection of friendly and destruction of enemy shipping."[96] It commanded the RAF 323, 325, and 328 Wings, XII Fighter Command, 1st and 2nd Air Defense Wings, and 350th Fighter Group.[97] Spaatz implored Lloyd select Quesada as his deputy. Although Lloyd had a more experienced general in mind, Spaatz was insistent. Lloyd relented and agreed to mentor Quesada. Quesada relinquished command of the 1st ADW on 12 March and assumed his new position on the 22nd.[98] Although this agreement was stressful for Lloyd, Quesada would blossom under the experienced and tolerant commander. Someone with less patience probably would have replaced Quesada.[99]

Spaatz was wise to pair young Quesada with an experienced mentor. Although he gained valuable experience quickly, Quesada's personality often caused problems. On one occasion, Quesada showed an ugly side while inspecting the American 81st Fighter Group. Quesada disliked the "phlegmatic" personality of one of the squadron commanders, Major Alex Jamieson. Quesada recommended that Colonel Kenneth Wade, the group commander, relieve Jamieson. Wade defended Jamieson as "the quiet type, all right, but he always gets the job done, inspires loyalty, and I am too short of qualified personnel to summarily fire someone in a critically important position." Quesada soon thereafter summarily fired Wade. In a twist of events, Jamieson later rendered outstanding service when he "helped sink a U-boat, successfully defended an attack on Algiers port, and downed numerous German fighters." Quesada flew in to the unit with Lloyd and both personally congratulated Jamieson on his success. The group saw Quesada as both petty and hypocritical.[100]

Hugh Lloyd became personally concerned when Quesada breached the chain of command by complaining directly to Spaatz over a command issue. Quesada and Lloyd had been arguing over the organization of subordinate units. Lloyd wanted to place British commanders, with American deputies, at each combined unit. Quesada felt this would deny American officers any opportunity to command; he went directly to Spaatz over the issue. To his credit, Spaatz "loathed national parochialism" and settled the

---

[96] Wesley Craven and James Cate, Eds., *The Army Air Forces in World War II*, Vol II (Chicago, IL: University of Chicago Press, 1949), 163.
[97] Craven and Cate, *The Army Air Forces in World War II*, Vol II, 163.
[98] War Diary of 62nd Fighter Wing, 12 December 1942.
[99] David Hall, *Strategy for Victory: The Development of British Tactical Airpower, 1919-1943* (Westport, CT: Praeger Security International, 2008), 140-145; Hughes, *Overlord*, 90.
[100] Hughes, *Overlord*, 92.

matter in an unbiased fashion. Quesada's argument actually carried weight and in the end, Spaatz decided Americans would lead certain units. This victory still cost Quesada as Lloyd later wrote his wife that he "should have taken the older general to be my assistant."[101]

Quesada made progress, however, and soon grew out of his occasional bouts of immaturity and insubordination. More importantly, he learned valuable air-ground operational lessons that would serve him well in Normandy. Demonstrating a growing maturity, Quesada had no problem yielding command to someone in a better position. In fact, it was in North Africa "that Quesada's willingness to adjust command arrangements to the needs of the battle first caught the attention of Eisenhower."[102] While at Casablanca, Quesada at one point handed over operational control of a B-24 anti-submarine wing to the navy "on the simple grounds that this scheme was likely to be more effective."[103] This account offers fair evidence that Quesada was more concerned with mission success than in maintaining service-centric control of all forces; he would also delegate command later in Europe when it similarly made sense.

One of Coastal's primary missions, preventing enemy resupply by sea, was crucial to driving the Axis out of Tunisia. Quesada's primary targets were harbors and convoys. Tankers were among the most lucrative targets as oil was always in short supply. By "destroying his air force, and disrupting his supply lines," NACAF would prevent the Nazis from evacuating their forces and bringing off a "Dunkirk."[104] Thirty years after the war Quesada recounted the importance of this mission, "If we did anything right it was a prevention of any ship getting across the Mediterranean to Rommel. We didn't let a damn ship get across to him in a month, not a ship. We sank every goddamn ship that ever was sent out—and more."[105]

Submarines were often difficult for NACAF to find, but Quesada knew someone who developed a working solution. Eddie Gary, a childhood friend of Quesada's, had determined "the way to get a submarine is, once it's located forget about all the other

---

[101] Hughes, *Overlord*, 92.
[102] Max Hastings, *Overlord: D-Day and the Battle for Normandy*, (New York, NY: Simon and Schuster), 1984), 271.
[103] Hastings, *Overlord*, 271.
[104] Craven and Cate, *The Army Air Forces in World War II*, Vol II, 185 and 199.
[105] Quesada, interview by Long and Stevenson, K239.0512-838, 30.

submarines and never let it get away." Given the submarine's maximum submerged speed of seven knots, airplanes would circle in an expanding radius from the last known position until it eventually surfaced. The seemingly simple technique of focusing on only one submarine was the key. Quesada later remarked, "By God, the British adopted it; our Navy adopted it; and it worked." Several B-24s were using the technique successfully and "slaughtering submarines in the Atlantic." However, these Liberators did not operate in the Mediterranean. It was Quesada, through his friendship with Gary, who brought this successful technique to NACAF.[106]

After a long, arduous, yet ultimately successful struggle to dislodge the Nazis from Tunisia, the Allies finally began making their way up the islands towards Italy. During Operation CORKSCREW, the invasion of Pantelleria, senior airmen saw their opportunity to vindicate strategic bombardment. Pantelleria would offer "unmistakable proof of the power of air bombardment to force a defended area to capitulate."[107] Quesada did not share this sentiment. Flying his P-40 in several attacks during CORKSCREW, Quesada watched countless bombers attempt to pummel the small islands into oblivion. For all the fanfare, the bombs did little to dislodge the islands' defenders. The Italian government had strengthened the natural defenses of Pantelleria; its over 100 gun emplacements "hewn from rock" were nearly impregnable. When the dust cleared, enemy troops emerged surprisingly intact from their bunkers.

As Allied ground forces swarmed the islands on 11 June, however, it was unclear if air or ground power was more responsible for their capitulation. "Enthusiastic airmen" affirmed that "the operation offered proof that no place and no force could stand up under prolonged and concentrated air bombardment."[108] Many cited Lampedusa Island as a total aerial victory, as the small island temporarily surrendered to a lost RAF pilot who had set down looking for directions.[109] Army ground commanders, on the other hand, held that none of the islands had the means to resist and would have surrendered anyway

[106] Quesada, interview by Long and Stevenson, K239.0512-838, 30-31.
[107] Craven and Cate, *The Army Air Forces in World War II*, Vol II, 430.
[108] Craven and Cate, *The Army Air Forces in World War II*, Vol II, 431.
[109] Craven and Cate, *The Army Air Forces in World War II*, Vol II, 421 and 429.

in the face of superior ground forces. Quesada held a balanced view and avoided the controversy. Years later he reflected, "CORKSCREW was operational wasted effort."[110]

Quesada did gain valuable experience in North Africa, however, and on 27 June Coastal Defense's radar screens illuminated a massive enemy effort to intercept convoy TEDWORTH, a forty-two-ship flotilla in the Sicilian Straits. Dispatching planes from RAF Group 242, Quesada did not realize at the time how massive the German effort would become. After the third surge of enemy aircraft materialized, the RAF was running low on fuel and reinforcements were not yet airborne. Quesada faced a difficult decision; he could either keep the escort on station with the possibility of several of them running out of fuel or send them home and leave the vital convoy unprotected. Quesada decided that the RAF would defend the convoy until the last possible moment and would only send home aircraft in pairs, thus keeping the flotilla protected as long as possible. He simultaneously scrambled relief aircraft. In the end, Coastal downed eight enemy to two P-39s lost, and more importantly none of the three waves of Axis aircraft seriously damaged any of the ships. Spaatz praised Quesada's quick action in defense of TEDWORTH; "it reflects great credit to your men and you personally…I am very pleased with your progress." This was a great moment of personal and professional growth for Quesada, and it would not be his last.[111]

Operation HUSKY, however, initially suffered from great confusion and provided Quesada with a much greater appreciation for air-ground communications. On one night in early July, the 52nd Troop Carrier Wing provided 144 C-47s laden with approximately 2,000 paratroopers from the 504th Regimental Combat Team. The C-47s took off from Tunisian airfields, but soon poor weather and planning severely hampered their airborne operations, making it extremely difficult for the pilots to find their drop zones. Even worse, anxious gunners on both American and British ships often mistook these aircraft for the enemy and fired indiscriminately. "Both friend and foe" combined their efforts and the corridor of approach to the drop zone "became alive with the deadly machine gun fire and heavy flak."[112] Twenty-three aircraft failed to return and over half sustained significant damage. "Every plane that came over us was fired upon because we could not

[110] Hughes, *Overlord*, 97.
[111] Hughes, *Overlord*, 100.
[112] Craven and Cate, *The Army Air Forces in World War II*, Vol II, 453.

identify it," one corporal explained. "The safest place for us tonight while over Sicily," one pilot said, "would have been over enemy territory."[113]

The wounded aircraft soon jammed the radio waves in Coastal Air Forces's air-sea rescue operations center in Tunisia; they were desperate for help. The station was completely overwhelmed and had to divert roughly half the contacts to a neighboring facility. Their quick action managed to recover some eighty-seven aircraft. Only four planes were beyond help and likely crashed into the sea. Quesada drew valuable lessons from the airborne debacle and cabled Spaatz a week later with his lessons learned. "Although the operation was ill-conceived and ill-planned," he wrote, "it has served a useful learning purpose." In his estimation, the effort to recover the planes safely "showed the value of our equipment."[114] The incident also reflected well on Quesada personally, as he remained calm throughout the entire episode and even commented on the "sing-songey R/T" procedures that "attested to the fact that an American transport or bomber pilot was calling. Fighter pilots don't use that sort of R/T—and get away with it."[115] Although the USAF takes air-ground communications for granted today, at the time Quesada was clearly breaking new ground.

Quesada remained with Coastal Air Forces through the Salerno landings during Operation Avalanche. By this time the Allies had gained air superiority and "the move to the mainland represented a continuation of what Allied Air forces were already doing."[116] After these landings, Coastal Command had largely completed its mission as there were few enemy submarines remaining and Axis shipping was exhausted. Quesada had used this time to improve his dealings with both subordinates and superiors. Even Hugh Lloyd saw the change, believing that his "previous concerns about my deputy were unfounded. He is, in fact, a splendid leader."[117] Spaatz was soon gutting Coastal Command's units for other missions and Ira Eaker began looking for a new position for Quesada in

---

[113] Rick Atikinson, *The Day of Battle: The War in Sicily and Italy, 1943-1944* (New York, NY: Henry Holt and Company, 2007), 108-109.
[114] Hughes, *Overlord*, 102.
[115] History, 15th Air Control Squadron, "The African Incident," transcript, 9 Jan 1942-29 Feb 1944, SQ-FI-CONTL-15-HI (Maxwell AFB, AL: USAF Historical Division, Air University, 1944).
[116] John Kreis, *Piercing the Fog: Intelligence and Army Air Forces Operations in World War II* (Washington: DC, Air Force History and Museums Program, 1996), 177.
[117] Hughes, *Overlord*, 108.

England. Spaatz had watched Quesada mature in the desert and agreed that his operational experience would continue to serve the Allies well.

Quesada's overall experience in North Africa was priceless; he had the rare opportunity of overcoming personality defects in a relatively forgiving environment. He was extremely fortunate to have the extremely patient Lloyd as a mentor. Clearly, he needed the guidance; there is substantial historical evidence that Quesada was overbearing and arrogant. When Dr. Tom Hughes researched material for his book *Overlord*, he spoke with fourteen former pilots of the 81st Fighter Group in North Africa. They sought Hughes out specifically to register their collective distaste for Quesada, some fifty years after the incidents took place. "General Quesada was an egotistical S.O.B," "great on public relations, but didn't give a damn about junior officers or enlisted men," and "Quesada was an unmitigated ass" were typical comments. Hughes later interviewed Quesada, who claimed he could not remember details of the incidents related to these comments.[118]

In addition to becoming a more mature person, Quesada solidified some of his ideas on airpower. His experience with NACAF gave him an appreciation of the operational-level effects that air interdiction can achieve. Meanwhile, strategic bombing advocates such as Arnold and Spaatz drew their desired lessons regarding Pantelleria. Quesada took a more balanced view, however, and acknowledged that while airpower softened the islands up, the army still had to put boots on the ground before it capitulated. Finally, Quesada was learning new applications of technology; his radar and communications experience from HUSKY would pay dividends when setting up his headquarters at Middle Wallop. Quesada was indeed ready for prime time.

Preparing for Operation OVERLORD

In September 1943, Quesada arrived in England and reported to Major General Lewis Brereton, Ninth Air Force Commander. Quesada assumed control of IX Fighter Command and immediately set to work planning for the D-Day invasion next summer. The Ninth's two sub-headquarters, the IX and XIX Tactical Air Commands, owned all

[118] Hughes, *Overlord*, 92, 327.

the fighters and fighter-bombers that would provide Close Air Support (CAS) for American invasion forces. Quesada was less than a year away from the invasion and had his work cut out for him. His experience and personal lessons from North Africa would serve him well in preparing his forces for the Normandy invasion and subsequent operations throughout France.[119]

Quesada's confident personality, uncommon initiative, and personable demeanor meshed well with his commander's personal traits and professional interests. Brereton was more interested in his troop carrier and medium bomber commands, which left Quesada largely alone to command IX TAC as he saw fit. From his time as a junior officer, Quesada performed best when not under constant oversight and he took advantage of the opportunity to prepare his command for the challenges they would face. In fact, the stark contrast between Quesada's pervasive initiative and Brereton's hands-off nature resulted in several ground generals calling the Ninth "Quesada's Air Force."[120]

Quesada's command grew exponentially and transformed several times in the months leading up to D-Day. On 1 February 1944, General Brereton split off two commands from IX Fighter Command, the IX Air Support Command (ASC), with Quesada as commander, and the XIX ASC, with Major General O. P. Weyland commanding. On 15 February, Quesada's IX ASC moved to Middle Wallop, where it would remain until the invasion.[121] Both Air Support Commands would again change their organization names to IX and XIX Tactical Air Commands (TAC) on 18 April.[122]

The rapid growth of his command meant Quesada could either remain in the office, mired in paperwork, or find a competent staff to do the work for him. As Quesada was not one for anchoring himself to a desk, he chose the latter course and surrounded himself with subordinates who would support his vision and let him attend to more important duties. Quesada selected Brigadier General Alvin Kincaid, a quiet and efficient officer, to be his chief of staff.[123] Colonel Lorry Tindal, who witnessed German

---

[119] Quesada, interview by Long and Stevenson, K239.0512-838, 123.
[120] Blair Garland Interview, K239.0512-1806, AFHRC
[121] John Ramsay, *Ninth Air Force in the ETO, 16 October 1943 to 16 April 1944*, Army Air Forces Historical Study 32 (Maxwell AFB, AL: USAF Historical Division, Air University, 1945), 39-40, 150.
[122] "Redesignation of Units," Ninth Air Force General Order Number 103, 18 Apr 1944, 536.02 (Maxwell AFB, AL: USAF Historical Research Center, 1944).
[123] Alvin Kincaid, "Announcement of Assignment," IX Tactical Air Command General Order Number 2, 24 April 1944, 536.02 (Maxwell AFB, AL: USAF Historical Research Center, 1944).

tactical air operations as an observer prior to Pearl Harbor, served as IX Fighter's operations officer.[124] Colonel Ray Stecker, a highly-experienced desert-warfare veteran and Quesada's representative at the Allied Expeditionary Air Forces (AEAF) Combined Operations Center in Uxbridge, was one of the few West Point graduates in Quesada's command. Quesada did not have anything specifically against West Point graduates, but neither did they impress him.[125]

Rather, Quesada filled his command with those who understood what tactical airpower could accomplish; those who did not share this vision quickly got on board or packed their bags. Understanding that his command would support army operations mainly through interdiction and direct support, Quesada had little time for airmen who could not let go of strategic bombing theory. Gone were the officers "not up to the rigors of modern war…men of limited imagination…advocates of interservice partisanship," and "those who postponed making decisions." Furthermore, he was determined to "weed out the incapable and inefficient." Quesada was only interested in officers who were "youthful, creative, energetic, decisive, and sometimes brash and rude."[126] Perhaps subconsciously, in other words, Quesada often chose officers like himself. In any case, he had neither the time nor inclination to make a man into something he was not.

Quesada's search for men unbiased in the ways of war highlighted an issue prevalent at all levels throughout the Allied air effort. The controversy plaguing air commands was not so much who commanded, but rather what the airplanes themselves could best accomplish. Some strategic bombing advocates such as Spaatz, Harris, and Doolittle held that heavy bombers could best aid OVERLORD through a strategic air offensive. Although admitting the utility of tactical airpower, many held that strategic bombers could almost single-handedly conduct decisive operations and end the war. As a result, Eighth Air Force often sought Ninth Air Force's aircraft to assist with daylight precision bombing attacks. When able, aircraft from the Ninth supported Eighth Air Force and were highly effective when they did; however, Quesada refused these requests when doing so would affect the attainment of his own objectives.

---

[124] John McManus, *The Americans at Normandy*: *The Summer of 1944* (New York, NY: Forge, 2004), 417.
[125] History, IX Tactical Air Command, 1 June 1944-30 June 1944.
[126] Hughes, *Overlord*, 126.

On the other hand, Sir Trafford Leigh-Mallory, Commander in Chief of the AEAF, communicated a more balanced view held by others. Most notable was Air Chief Marshal Sir Arthur William Tedder, Deputy Supreme Commander under General Eisenhower. Tedder was a major proponent of tactical airpower and likely drove this memorandum. In any case, on 10 March Leigh-Mallory wrote Brereton and laid out his expectations of Ninth Air Force during OVERLORD; Quesada was in complete agreement with these recommendations. The letter said the greatest contribution the Ninth could make would be "to attack rail communications, especially shops, sheds, maintenance facilities, signal systems, junction points, and marshalling yards." These target types, of which there were seventy-eight in Northern France and Belgium alone, were clearly interdiction vice strategic targets. Further, this letter made the unqualified statement that "the Ninth Air Force is now released from its previous first priority commitment to assist Eighth Air Force when called upon." Leigh-Mallory did not completely cut Ninth Air Force loose, however, and added, "Any available P-47s or P-38s should be placed at the Eighth's disposal in support of POINTBLANK."[127] Quesada, although clearly a proponent of tactical aviation, avoided this intrigue for the most part and instead focused on how to best prepare his command for the invasion.

The IX ASC was facing both integration and personnel problems, however, and by February Quesada was struggling to keep up. With the IX ASC established at Uxbridge, fighter groups started arriving in droves. The 70th Wing gained three groups in February alone: its 358th Fighter Group flew its first mission on the 3rd, the 362d Fighter Group flew its first on the 8th, and the 363d was operational on the 22nd. As these fighter units expanded, "a serious recognition problem developed with the P-51, which, with its square-cut wing tips, resembled the ME 109."[128] In spite of repeated warnings, Thunderbolts continued to engage Mustangs. This not only annoyed Mustang pilots, but also wreaked havoc with their escort operations. Describing an unfortunate situation which no doubt gave Quesada a headache, the 356th Fighter Squadron's historian writes:

> The P-47 pilots were out for blood and forced the squadron to break continually in order to avoid the possibility of being shot down by these "hot rocks." Relationships toward the P-47 pilots were becoming somewhat strained around the Boxted airdrome, and it was generally considered that perhaps the Thunderbolts should be marked with German

[127] Ramsay, *Ninth Air Force in the ETO, 16 October 1943 to 16 April 1944*, 153-154.
[128] Ramsay, *Ninth Air Force in the ETO, 16 October 1943 to 16 April 1944*, 150.

> crosses or at least award their pilots with the Iron Cross for the work they were doing in disrupting the bomber escorts.[129]

In addition to air-to-air issues, Quesada had many air-to-ground problems to solve. One of the major issues that made effective CAS difficult was a lack of accurate bombing techniques. Strategic bombing advocates exclusively promoted level-bombing from high-altitude, which was less accurate and unsuitable for most CAS. Level-bombing increases Circular Error Probable (CEP) compared to dive-bombing partly due to an increase in ground track velocity. Given the same delay, this means either an early or a late release will result in the bomb landing further from the target when delivered from a level vice a diving attack. In addition, bombers generally perform level deliveries from high altitude, which increases weapon time-of-flight and further increases CEP; strong winds make this effect worse. Finally, flying level and higher makes target recognition much more difficult. Although level bombing is useful against fixed targets, it is often ineffective against the smaller and more mobile targets found on the battlefield.

Drawing from his experience in North Africa, Quesada set up a training course in bombing for fighter pilots; this was the first step in his transformation of fighter units into fighter-bomber units. The two-week course called for concentrated bombing practice for tactical groups, and each pilot went on five dive-bombing and five low-level bombing missions. Furthermore, each squadron had to fly either three dive- or glide-bombing missions as a unit.[130] During this time, IX TAC also experimented with rocket employment.[131] Quesada understood that fighters would enjoy a tighter CEP due to the inherent advantages of dive-bombing over level-bombing. Many pilots resisted his instruction, however, having grown up watching the spectacular aerial battles of World War I and absorbing the bomber offensive propaganda. One flyer summarized his discontent with the new technique in April when he said, "I don't believe in all this dive-bombing shit, it ain't natural."[132] Quesada had to solve institutional disinterest quickly or this mindset would hamper their operations during the invasion.

Quesada also participated in a lecture series as part of a larger Ninth Air Force effort to prepare for the summer. In one of these, from 24 to 25 January 1944, Quesada

---

[129] Ramsay, *Ninth Air Force in the ETO, 16 October 1943 to 16 April 1944*, 150.
[130] Ramsay, *Ninth Air Force in the ETO, 16 October 1943 to 16 April 1944*, 104-105.
[131] History, IX Tactical Air Command, 1 April 1944-30 April 1944, 2.
[132] Hughes, *Overlord*, 128.

gave a lecture titled "The Organization and Operation of the Air Support Command."[133] His new Signals Officer, Lieutenant Colonel Blair Garland, gave a lecture in the same series called "Functioning of Radar in Air Support." Officers from Ninth Air Force Headquarters, commanding generals of corps and divisions of ground forces, air liaison officers and key US Navy and RAF personnel attended these lectures. Quesada was getting his view on air support out to anyone who would listen, most importantly the army commanders he would soon support.[134]

Quesada realized good communications go both ways, however, and he sought advice from others who had already been through these tough problems. Major General John Cannon, commander of the Mediterranean Allied Tactical Air Force, was a highly competent and affable commander; he was happy to lend a hand.[135] Quesada was also hoping for tactics manuals, but nobody had the time to write down lessons. He instead asked Cannon for an exchange of officers. Quesada sent some officers to Italy to observe tactical operations and Cannon dispatched several of his own pilots to England to help train the staff at air-support schools. "We've got to teach these kids to fly on the deck and to arm bombs," he explained to a friend at the air forces' proving ground in Florida. We've got to figure out the best angles of dive, type of bombs, and release tables if we want to make any impressions on this war."[136] Quesada, although self-confident and aggressive, knew when to ask for help. He also took time to improve his own knowledge and, along with sixty-five other senior officers, attended an RAF School of Army Cooperation.[137] Although there was simply not enough time to accomplish all of these tasks before D-Day, Quesada kept pushing IX TAC to the limit.

Quesada was also showing improvement on a personal level; he handled problems much better than during his early days in North Africa. Command experience had mellowed Quesada since the Jamieson incident and he grew to accept personality types other than his own. "The more I see of war the more I realize there is a difference between men." Quesada impressed his men as a "smart, colorful, and dynamic

---

[133] Ramsay, *Ninth Air Force in the ETO, 16 October 1943 to 16 April 1944*, 104.
[134] Ramsay, *Ninth Air Force in the ETO, 16 October 1943 to 16 April 1944*, 104.
[135] 350th Fighter Group Historical Data, 1 Oct 1942 to 17 Aug 1943, GP-350-HI (Maxwell AFB, AL: USAF Historical Research Center, 1942)
[136] Reports, Daily Staff Meetings, IX TAC, 12 April, 1944, 536.02, AFHRC.
[137] Ramsay, *Ninth Air Force in the ETO, 16 October 1943 to 16 April 1944*, 108.

personality-an experienced airman and not just a political appointee."[138] Another said of him, "I love the guy." Instead of calling a spade a spade, "he called it a shovel—you had better get the hell out of the way."[139] Both his men and those at the top commented positively on Quesada's character.

In order to demonstrate his command's newly developed skills, Quesada requested permission to attack bridges at both Vernon and Mantes-Gassicourt, France. These missions would both train his pilots and convince the bomber community of the effectiveness of fighters in a bomb-dropping role. AEAF agreed, and on 7 May, Quesada sent eight of his fighter-bombers, each with two one-thousand pound general purpose (GP) bombs, against the bridge at Vernon. Quesada had trained his fighter-bombers to begin their initial approach to the target area in a 60-degree dive. They would then roll out at 200 feet above the ground and release their bombs at an incredibly low 20 feet before pulling up to only 150 feet. The fighters had to fly their attack parameters exactly as there was little room for error; "This buzz bombing was made possible through the use of 8/10 second delay fuses."[140] The fighter-bombers, "in a zero-level attack…completely destroyed" the bridge at Vernon.[141] The Mantes-Gassicourt was "badly damaged and soon put out of use."[142] Air Chief Marshall Leigh-Mallory, Air Commander-in-Chief, AEAF, commended the 365th Fighter Group for its destruction of the Vernon rail bridge. He said, "My heartiest congratulations on your successful attack on Vernon Bridge yesterday."[143] "We've convinced the Old Man," Quesada congratulated his staff.[144] His command had performed brilliantly and Quesada himself was due for recognition; three days later Quesada pinned on Major General.[145]

The Allied Expeditionary Air Force (AEAF) stipulated five target types that Ninth Air Force would "soften up" in the months prior to D-Day. In priority order, the targets were marshalling yards, coastal batteries, airfields, radar stations, and bridges. The

---

[138] Hughes, *Overlord*, 126.
[139] Garland, interview by Ahmann, K239.0512-1332, 116.
[140] History, IX Tactical Air Command, 1 May 1944-31 May 1944.
[141] Robert George, *Ninth Air Force, April to November 1944*, Army Air Forces Historical Study 36 (Maxwell AFB, AL: USAF Historical Division, Air University, 1945), 42.
[142] Craven and Cate, *The Army Air Forces in World War II*, Vol. III, 157.
[143] History, IX Tactical Air Command, 1 May 1944-31 May 1944.
[144] Reports, Daily Staff Meetings, IX TAC, 12 April, 1944, 536.02, AFHRC.
[145] History, IX Tactical Air Command, 1 May 1944-31 May 1944.

historian for IX TAC notes how they played "a minor role in the attacks on the radar stations and coastal batteries," as, "for the most part our missions were against the other three targets."[146]

During May, airfields rose to the top of Ninth Air Forces priority target list. In order to ensure Allied forces enjoyed air superiority during the invasion, IX TAC stepped up attacks on airfields from anywhere near the assault beaches to as far into France as they could reach.[147] Along with establishing command of the air, the IX TAC continued its interdiction missions; trains and lines of communications leading to the Northern France remained a high priority. On a single day, IX TAC smashed so many trains that the pilots referred to it as Chattanooga Day in recognition of the Glenn Miller recording "Chattanooga Choo Choo."[148] During this time, IX TAC stopped painting its aircraft. They determined that camouflage paint only worked well on the ground; that is, when hiding parked fighters from enemy air attacks. In the air, it subtracted 10 mph off of a fighter's top speed. IX TAC pilots decided, "Since we have such complete air supremacy camouflage is second in importance to performance." They stopped painting everything except the insignia and tail numbers.[149]

Although not as visible as paint-schemes, air-to-ground communication was perhaps the most important innovation IX TAC contributed to tactical airpower. At the center of this effort was Colonel Blair Garland, Quesada's signals officer. Quesada stationed Garland at Middle Wallop, gave him whatever he needed, and got out of his way.[150] Garland brought in several experienced technicians and radar experts, several of whom he had worked with when assigned as the officer in charge of all communications for OVERLORD. Garland had constructed an elaborate plan whereby air support parties embedded with the assault forces would communicate through ships to Uxbridge in England, but maintained a backup of visual signals in the case of communications failure.[151] On one occasion, Garland's signal technicians needed to fly to New York and

[146] History, IX Tactical Air Command, 1 May 1944-31 May 1944.
[147] George, *Ninth Air Force*, 31.
[148] Donald Miller, *Masters of the Air* (New York, NY: Simon & Schuster, 2006), 291.
[149] History, IX Tactical Air Command, 1 April 1944-30 April 1944, 7.
[150] History, IX Tactical Air Command, 1 May 1944-31 May 1944.
[151] Garland, interview by Ahmann, K239.0512-1332, 128.

retrieve two transmitters, but red tape was holding them up. Quesada produced $460 from his own pocket and solved the problem on the spot.[152]

Garland's communications system was important, but Quesada also made sure that the human aspect of communications was up to standards. In order to ensure smooth coordination, IX TAC both received Ground Liaison Officers (GLO) from the army and sent Air Support Parties (ASP) in return. The GLOs were army personnel assigned to Quesada's staff and lower echelons all the way down to the group level. Their mission was to help the air force develop a full picture of the ground situation, brief air crews prior to takeoff, and disseminate mission reports taken from pilots during debriefs to the appropriate ground commander. The GLOs worked closely with air force S-2s and S-3s to make sure they were on the same page as intelligence and operations planners. The GLOs attended the same two-week RAF School of Army Cooperation that Quesada did.[153]

The ASPs represented the other crucial half of the human equation. These parties, complementing what the GLOs did for the air force, would serve army corps, divisions, and regimental combat teams. Their functions included helping army commanders and personnel formulate air strike requests. These parties usually had a pilot in the mix; their understanding of the airpower perspective was key to giving ground commanders advice on what aircraft could and could not do. Each party also carried mobile ground-to-ground and ground-to-air communications equipment in order to coordinate with other ground units and airborne aircraft.[154]

Quesada's command was the first to employ the Microwave Early Warning (MEW) Radar, which represented a quantum leap in technology over the longer wavelength radars then in use. The MEW's shorter frequencies were a much higher resolution and could make out individual aircraft at much greater ranges than contemporary radars. The only downside was the MEW's bulky size, which is likely why they were not prevalent early in the campaign. Garland learned of the MEW from a staff member who worked on it while at MIT, and informed Quesada, who managed to

[152] Quesada, interview by Long and Stevenson, K239.0512-838, 30.
[153] George, *Ninth Air Force*, 53.
[154] History, IX Tactical Air Command, 1 May 1944-31 May 1944.

find space for it on the invasion ships early enough that they would arrive in theater on D+2.[155]

As D-Day approached, Quesada along with his command was well-prepared for the invasion, so much so, in fact, that Brereton had him brief the entire Ninth Air Force portion of the plan at the overall OVERLORD briefing on 15 May. He would mostly focus on Operation NEPTUNE, which covered operations beginning with the Normandy landings on 6 June and continuing through the end of the month. In front of Prime Minister Churchill, Field Marshall Jan Christiaan Smuts, Eisenhower, Montgomery, Tedder, Admiral Ramsey, Leigh-Mallory, and Sir Alan Brooke among others, the forty-year old Quesada took the stage. Not only did he brief the intricacies of Ninth TAC's plan, but he also briefed the IX Troop Transport Command and IX Bomber Command's portion, which was clearly above his pay grade: such was Brereton's confidence in him. Quesada did not disappoint and nailed the briefing. At one point Quesada appeared to be on thin ice. Major General Lawton Collins, VII Corps Commander, had asked him about the presence of German fighters. Quesada dismissed his concerns with, "there isn't going to be any German air force there." [156] At that point, Churchill himself stepped in with, "You are very confident…at least that is a great asset."

The "Ninth Air Force Plan for Operation NEPTUNE," initially published on 26 April 1944, was modified right up to D-Day. The portion directing IX TAC was likewise refined and allocated groups according to mission: five groups for "high cover assault beach area," two groups for "shipping cover," six groups for "air cooperation," and five groups in "reserve." The plan directed RAF aircraft to provide low cover between three and five thousand feet, which meant IX TAC's P-47 owned high cover between eight and fifteen thousand feet. P-38s, chosen partly "because the relative ease of their identification would afford a guarantee against friendly fire," would provide shipping route cover.

The air cooperation aircraft would operate in accordance with the Joint Air Forces tasks of: "(1) protecting the cross-Channel movement against air attack, (2) preparing the way for the assault by neutralizing coast and beach defenses, (3) protecting the beaches

[155] Garland, interview by Ahmann, K239.0512-1332, 100.
[156] Quesada interview, in Richard Kohn, *Air Superiority in World War II and Korea*;

from air attack, (4) reducing the enemy's ability to mount effective counter attacks, and (5) providing full air-ground cooperation in the advance of the ground forces from the assault beach head." Finally, reserve aircraft would be under air alert during the initial assault period. These squadrons, already airborne, would patrol each beach with tactical direction from the headquarters ship. They would "attack defense targets which the main bombing operations had not neutralized, and which were seen from the air to be interfering with the actual landing of our forward troops." This gargantuan plan ensured Quesada's IX TAC would have its hands full.[157]

On D-Day, 6 June 1944, IX TAC flew 1,431 sorties in support of the invasion, its largest sortie count to date. Poor weather, which helped obscure the approaching convoys, hampered both Allied and German operations.[158] Beginning at dawn IX TAC fighters flew extensive convoy control, but found few Germans in the air. At one point fighters flying convoy cover, "reported sighting and chasing off three FW 190s." Ninth Air Force kills of the day were limited to "two enemy aircraft destroyed by mediums and three destroyed and one damaged by reconnaissance aircraft."[159] IX TAC flew an additional 624 sorties in bombing and armed reconnaissance missions, attacking "bridges, gun batteries, railroad culverts and embankments, motor transports, marshalling yards, troop concentrations and targets of opportunity." These interdiction missions held off much-needed German reinforcement to the landing beaches.[160] At least the Allies had air superiority for the landings; Quesada's prediction was proven mostly correct.

Unfortunately, the invasion faced significant problems that threatened the Allied ability to establish a secure beachhead on Omaha. This gave Quesada another opportunity to think quickly on his feet. The more than 6 million pounds of bombs dropped by heavy bombers in support of the invasion landed long due to blind bombing through the weather. Naval guns were largely ineffective in disabling the batteries along the cliff walls. As a result, many German emplacements were unharmed, and they raked the beaches with artillery and gunfire. Closer to home, Quesada's Air Support Parties were decimated along with their accompanying assault forces as they set foot on shore.

---

[157] George, *Ninth Air Force,* 11-15.
[158] History, IX Tactical Air Command, 1 June 1944-31 June 1944.
[159] George, *Ninth Air Force,* 76.
[160] History, IX Tactical Air Command, 1 June 1944-31 June 1944.

When Colonel Garland finally managed to get ashore at 1700 hours, he landed under heavy fire and was lucky to survive. Unfortunately, the Germans destroyed both of his two truck-mounted radios.[161] The elaborate shore-to-ship communications plan crumbled in the face of confusion. Back at Uxbridge, radar operators, controllers, and generals alike struggled to make sense of the confusion and were quickly overwhelmed. Quesada tried to redirect his fighters from Utah to Omaha, but "Uxbridge was too cumbersome for the fast-paced battle."[162] Quesada had to find a fix and fast.

After gaining permission from Brereton, Quesada boldly redirected all fighter control from Uxbridge to his smaller and more efficient center at Middle Wallop. The network in Middle Wallop ran directly to radio towers on the Isle of Wight, where direct line-of-sight radio contact with Army headquarters ships as well as airborne fighters was possible.[163] This was an immense gamble, since a total breakdown of fighter communications during the most massive Allied invasion of the war could have catastrophic consequences. Quesada's gamble paid off, however, and along with scrambling additional fighters to pave the way for the invasion, control of tactical fighters went up several orders of magnitude.[164]

Beginning at 0600 on 7 June, Quesada ensured continual coverage over the beaches. One of IX TAC's squadrons flew overhead targets in the Aure River-Bayeux-Airel area at all times. Late the previous night, the V Corps commanding general had requested, "continuous fighter-bomber support to search out and attack enemy artillery firing on Omaha beaches." Quesada's response was as subtle as Thor's Hammer. His squadrons, which rotated out every 30 minutes, smashed gun positions "as they have taken heavy toll on beach Omaha." Throughout the day, IX TAC flew thirty-five squadron strength missions; 467 aircraft attacked "targets of opportunity with 1,000 pound GP bombs and frag clusters," including six bridges near Carentan. The overall sortie count for 7 June was 1,594. This broke the record IX TAC had just set the day before.[165]

---

[161] Garland, interview by Ahmann, K239.0512-1332, 143.
[162] Hughes, *Overlord*, 8.
[163] Memo on Fighter-bomber control for D-Day, 533.4501-8, (Maxwell AFB, AL: USAF Historical Division, Air University, 1944).
[164] Hughes, *Overlord*, 8-9.
[165] History, IX Tactical Air Command, 1 June 1944-31 June 1944.

Quesada successfully demonstrated his capacity for quick thinking during one of the most dramatic combat operations in America's history. Instead of allowing the chaos to paralyze him, Quesada demonstrated the courage of his convictions and in so doing saved countless lives on the ground. On 8 June, Brereton praised Quesada's command. "On seven June groups of your command furnished close continuous support to the Omaha beachhead area. The situation there was critical and the excellent attacks and continuous support rendered by you restored a delicate situation." Quesada added to his commanders, "History may show they saved the day."[166]

Demonstrating his preference for leading from the front, on 7 June Quesada flew his fighter behind the beach and personally inspected the situation. He established his headquarters in Normandy a mere four days after the invasion and sent Ninth Air Force the succinct message, "Headquarters IX Tactical Air Command established on continent effective 10th 1530 June 1944. Middle Wallop becoming rear headquarters IX Tactical Air Command at same time."[167]

During the crucial battles for Carentan and later Cherbourg, it was vital that Quesada not wall himself off from the fight in an ivory tower. To determine how best to direct his fighters, he had to maintain a close relationship with those he supported. This dedication to mission combined with his unique personality allowed Quesada to forge an incredibly close relationship with General Omar Bradley, First Army commander, during the invasion. Quesada never passed up the opportunity to fly his personal P-38 to all of his airfields; he felt this was necessary to motivate his airmen and review tactical procedures. His positive attitude was infectious as even Bradley noted, "Your airmen reflect your enthusiasm."[168]

One of the great boosts to their cooperation was a shared vision. Both Bradley and Quesada "had a common zeal to win the war and to ignore the bitter history of air-ground animosity."[169] They set up their command posts right next to each other,

---

[166] Message, Adv. HQ, IX Fighter Command, to commanding general, Ninth Tactical Air Command, 8 June 1944.
[167] History, IX Tactical Air Command, 1 June 1944-31 June 1944.
[168] James Arnold, Robert Hargis, and Darko Pavlovic, *US Commanders in World War II* (Oxford: Osprey Publishing, 2002), 55.
[169] Hughes, *Overlord*, 156.

separated only by a hedgerow "so a single bomb could not kill both of us."[170] "We spent an awfully [sic] lot of time together in Normandy, and we never once had a substantial disagreement."[171] The two men held great respect for each other. After his tank columns first broke through the German lines, Bradley noted to General Arnold, "Quesada was a peach to work with, because he was not only willing to try everything that would help us, but he inspired his whole command with his desire to such an extent that these youngsters now do almost the impossible whenever they think we need help."[172]

Quesada greatly respected Bradley's leadership style in dealing with both the IX TAC and his own army troops. "Bradley was not my commander…he never attempted to be my commander," Quesada said. "He would use a great persuasion to have our forces used in a manner that was obviously directed to the assistance of his, and I found nothing wrong with that," Quesada continued. "I found everything right with it."[173] Bradley likewise showed respect for Quesada and his forces, as he "recognized clearly that we had a knowledge of our arm that he did not have."[174]

One of the ways in which Quesada fostered this relationship was by personally resolving major issues. Approximately one month after D-Day, Quesada was having breakfast with Bradley when the latter produced a letter from the V Corps commander. The corps commander said German air action had stopped them dead in their tracks and they could not move forward. Quesada held his tongue. After breakfast, Quesada stormed to his command post and demanded details of the engagement. Upon further research, it turned out that it was only a two-ship of German fighters that had strafed a regimental command post, causing very light damage and one minor injury. He also collected the latest numbers of the overall air effort up to this point. Quesada found Bradley later in the day and said, "I would like to get to the bottom of this because it is obviously important to you otherwise you wouldn't have brought it up."[175] Quesada, Bradley, V Corps Commander Gerow, and division commander Gearheart then rode a jeep down to the regiment that originated the message. In front of his superiors and

---

[170] McManus, *The Americans at Normandy,* 153.
[171] James Carafano, *GI Ingenuity, Improvisation, Technology, and Winning World War II* (Westport, CN: Praeger Security International, 2006), 157.
[172] Arnold, Hargis, and Pavlovic, *US Commanders in World War II*, 56.
[173] Quesada, interview by Long and Stevenson, K239.0512-838, 165.
[174] Quesada, interview by Long and Stevenson, K239.0512-838, 165.
[175] Quesada, interview by Long and Stevenson, K239.0512-838, 167.

Quesada, the regimental commander complained that two German aircraft strafed one half-track and wounded their cook. This was his justification for being unable to prosecute the attack. Bradley's jaw dropped.

Quesada, possessing natural showmanship, took the card with the latest numbers out of his pocket, and proceeded to rattle off all of the thousands of tons of bombs dropped, millions of rounds strafed, and targets destroyed in Germany that day by the various Allied Air forces. "Now here we got a case where your whole Army is stopped in this particular attack by two airplanes that dropped no bombs, they shoot a cook in the ass, and they set a half track on fire," he said. "If the airpower is as effective on the Germans as it seems to be on us, why aren't we in Berlin?"[176]

Bradley was so upset he dared not speak from that moment through the entire ride back to headquarters. The next day, he distributed a letter to all of his corps, division, and regiment commanders, which said "in no uncertain terms in rather aggravated language that they must not expect to go through a war being immune from the German air force. They are subject to being attacked by the German air force just like they are subject to being attacked by the German armor."[177] On occasions such as this, Quesada's charisma and shrewdness made all the difference. He could simply have pointed out to Bradley that the German attack was limited to two aircraft. Instead, he went through the extra effort to accentuate his point and that made all the difference. The results were both positive: greater respect from Bradley and a letter to all 1st Army commanders to quit their whining.

Both men's staffs continued the close cooperation their respective leaders practiced. On a daily basis, IX TAC and First Army developed the joint air-ground plan together. They would then pass the entire plan to both Quesada and Bradley, who had high confidence in their subordinates and rarely changed anything. Their joint planning cell was very different from the persistent tension, friction, and "double dealing" that occasionally plagued other air-ground operations.[178]

In mid-June, it was difficult for Allied commanders to assess the results of the interdiction program. The Germans, on the other hand, were on the receiving end and

[176] Quesada, interview by Long and Stevenson, K239.0512-838, 167.
[177] Quesada, interview by Long and Stevenson, K239.0512-838, 167.
[178] Hughes, *Overlord*, 158.

were all too aware of the impact it was having. According to the captured "War Diary of the 7th German Army," as early as D+1 Allied attacks on transportation targets were debilitating the war effort. "Railway transportation is impossible because the trains are observed and attacked in short order. Troop movements and all supply traffic by rail to the army and within the army sector must be considered as completely cut off." Damage to the railways forced "the conversion of the entire supply and transportation system to motor transport." The lack of rail meant Panzer units wore themselves out driving to the battle and, once they were there, there movement was limited, "due to the lack of fuel and the unreliability of the ammunition supply." The list continued in much the same way; fighter-bombers severed Germany's lines of communication through France at the knees. It is difficult to overstate the importance of these interdiction missions and the number of battles that the Allies would as a result not have to fight. Quesada's IX TAC deserves a significant portion of the credit for these diary entries.[179]

As Allied forces pushed out from the beaches, Quesada's IX TAC continued its interdiction and close support operations; the next significant hurdle was Cherbourg on the Carentan Peninsula. On 21 June, Brereton met with Quesada and Collins at VII Corps Headquarters to discuss the plan for air-ground cooperation during the projected attack. The plan for Cherbourg was air-centric as "it was held that the enemy was disorganized and it was believed that a heavy air attack immediately preceding the ground attack would greatly facilitate the advance of VII Corps. Circumstances demanded that the air plan be rushed through its later stages," as the completed plan arrived on the continent on 22 June: the same day as the attack. The three generals were intensely busy as in addition to planning they attended conferences with Generals Bradley, Spaatz, and Vandenberg, Air Marshal Coningham, and Air Vice Marshal Groome. Fortunately, Quesada already proved he could think and act quickly; this was no time for indecision.[180]

On the morning of 22 June, Quesada was ready to employ all available bombers and fighter-bombers in support of the attack. Quesada had coordinated with both ground commanders and the other Ninth Air Force Commands, as this was the largest assault in

[179] George, *Ninth Air Force,* 94-95.
[180] George, *Ninth Air Force,* 101-102.

France since the D-Day invasion. From 1302 to 1355 Hours, some 557 Ninth Air Force fighter-bombers strafed ground targets and employed Quesada's dive-bombing techniques, delivering 520 tons of bombs. At 1400, designated as H-Hour, all eleven groups of IX Bomber Command softened up eleven target areas around Cherbourg as ground forces began their assault. These attacks met with mixed results; gun positions, barracks, tank traps, and defense systems all took significant damage from four of the groups, but "there was no evidence of damage to the targets in the remaining seven group attacks." Enemy air activity, on the other hand, was practically nonexistent. Only one group sighted a single enemy aircraft, which refused to engage and sped off. The attacks on 22 June were sill costly, however, as Ninth Air Force lost twenty-four bombers in low-level attacks. Although many of these losses were due to anti-aircraft fire, some were due to pilot error. Attacks at 200 feet were inherently risky.[181]

From 23 to 30 June, IX TAC continued to pound enemy positions, much to the satisfaction of ground commanders. In one particular case, four groups of medium bombers attacked the Fort du Roule, a fortified enemy stronghold. The bombers assaulted the fortification with 2,000 pound GP bombs, and although the structure itself sustained little damage, in three instances they destroyed gun positions. Ground force officers were pleased and, "cited these attacks as particularly good examples of air-ground cooperation resulting in quick movement by the infantry with comparatively little trouble." On 29 June, a fighter-bomber squadron attacked Fort Central on the Cherbourg breakwater, which up to this time had held out against repeated artillery barrages. "Immediately after the air attack," the fort "ran up the white flag." Although the bombs had done little damage to the fort's massive granite structure, the prisoners "were unanimous in their statement that dive bombing rather than the fire of 155s caused their surrender." This candid appraisal by the Germans shows that Quesada was wise to train his IX TAC to conduct dive- and low-level bombing runs; these attacks were much more accurate than level deliveries from high altitude.[182]

[181] History, IX Tactical Air Command, 1 June 1944-31 June 1944.
[182] George, *Ninth Air Force,* 102-107.

Organized resistance within Cherbourg ceased on 28 June, and by 1 July the entire peninsula was in Allied hands.[183] On 20 July 1944, Brereton penned a letter to Arnold making several observations of Quesada's IX TAC support operations. Although he specifically referenced support of the VII Corps 22 June advance on Cherbourg, his comments summarize much of the good and bad that Quesada faced from D-Day up to this point. He lauded Quesada's superior communications, which were so smooth that IX TAC aircraft on reconnaissance missions directed artillery fire on Cherbourg as "standard operation procedure."[184] Brereton noted how Quesada's IX TAC "established [the] most cordial and close relationship with the ground forces," and made "every effort to give them what they wish." If unable to comply, he noted the army was usually willing to accept their judgment and advice.[185] Brereton further commented on a typical difficulty in close support, namely the apparent inability of ground forces to exploit the shock effect of aerial bombing. These comments are also likely from conversations with Quesada. Brereton noted:

> As the morale effect on the enemy, due to bombing and strafing, is often of short duration, it is essential that ground forces take immediate and complete advantage of such air operations. As forward movement of ground forces under battle conditions is necessarily slow, it might be found wise to have forward elements as close as 500 yards from the bomb line. This will, of course, place these troops in danger of being attacked by their own Air Force, but it is a risk that must be accepted if coordinated attack is to be successful.[186]

This suggestion is half of a two-sided blade that cut down a multitude of soldiers throughout the war. The air force wanted ground troops stationed close to the bomb line, then to move forward as quickly as possible after close support bombing runs in order to exploit shock effect. Ground troops, on the other hand, were understandably wary of being too close to the delivery pattern and hesitant to move forward too quickly in case of late weapon releases. The problem resolved to a balance of acceptable risk versus probability of mission success; Quesada and Bradley as well as many others struggled incessantly with this problem. The closer troops were to the bomb line and the sooner they moved in after bomb release the higher the risk, but also the higher the chance of

[183] History, IX Tactical Air Command, 1 June 1944-31 June 1944.
[184] Lt Gen Lewis Brereton, Commander, Ninth Air Force, to General Henry Arnold, Commander, Army Air Forces, letter, dated 20 July 1944, 2.
[185] Brereton, to Arnold, letter, 20 July 1944, 2.
[186] Brereton, to Arnold, letter, 20 July 1944, 5.

exploiting enemy shock. Brereton noted that the bombing and strafing of friendly troops happened three times on 22 June near Cherbourg alone. This problem dogged Quesada throughout the war.[187]

By the time Allied forces captured Cherbourg at the very end of June, Quesada's men had learned four valuable lessons. First, although tactical aviation greatly supported the troops in first cutting the Carentan peninsula and later assaulting Cherbourg, airpower could not easily destroy enemy strongholds. In a few circumstances, it may have encouraged Germans to surrender fortifications. Even with great numbers of bombers that practically leveled the historic town, however, in most cases ground forces eventually had to slug it out with relatively unscathed German soldiers. Second, Ninth Air Force conducted many wasteful air attacks on several historic towns, effort that would have been better spent in the already proven interdiction mission. Third, friendly fire incidents could easily destroy even the best relationship between air and ground forces. Finally, forward observers could not contact and redirect aircraft once airborne and many missions were wasted. Although many of these problems are as unalterable as the nature of war, Quesada would find an innovative solution for this last problem in the coming months.

On 1 July, Eisenhower visited the Normandy battlefield and Quesada showed off his boyish charm in an incident that made the news. After a command briefing concluded, Quesada was departing when Eisenhower asked him, "Where are you going, Pete?" Quesada answered, "I'm going down to this new strip we have and [then] I'm going on a fighter mission." Eisenhower then asked, "How about going down with you?"[188] Just like that, the AEAF commander hopped in the backseat of Quesada's modified P-51. Quesada was unable to resist and jested to a somewhat shocked Bradley, "All right Brad, I'm going to fly to Berlin!"[189]

Quesada and Eisenhower flew approximately fifty miles south. Although they spent some time over enemy lines, they avoided any engagement with the Germans. "We got a notice of some bandits twenty miles away," Quesada recalled, "but that was the

[187] Brereton, to Arnold, letter, 20 July 1944, 5.
[188] Quesada, interview by Long and Stevenson, K239.0512-838, 9.
[189] Victor Brooks, *The Normandy Campaign; From D-Dat to the Liberation of Paris* (Cambridge, MA: Da Capo Press, 2002), 206.

nearest thing we came to seeing anything hostile. Eisenhower loved the idea of flying. We came back and landed and goddamn the mud splashed all over the place." Eisenhower, surprised by muddy landing field, commented, "My friends always tell me you airmen live in hotels." Quesada noted "It was good to have him see that type of operation, very spartan. The length of the strip was quite short…and boy, if you didn't put it down on the first twenty yards of that strip, you had it." Although Eisenhower "caught hell from Marshall" over the very public and somewhat dangerous escapade, it was mostly in good humor. Quesada certainly enjoyed himself, but the event also bettered Eisenhower's opinion of the USAAF.[190]

Quesada had personally come a long way since North Africa; he was now mature and battle-hardened. He thoroughly prepared his command for the D-Day invasion. When events did not proceed according to plan, he confidently intervened and reorganized his command and control on the fly. This is one of the marks of a great leader. Too many commanders throughout history have stuck to a plan that showed signs of failing because they either could not find an alternate solution or lacked the courage to implement it. Quesada had neither of these problems. His star was rising along with the ground commanders he supported and his unbiased view of airpower was paying substantial dividends. Although the battle stiffened in early July due to increased German resistance, there was no rest for the weary and Quesada would use this precious lull wisely.

Operation COBRA and the Air-Tank Team

One month into the Normandy invasion, the Allied ground campaign was stuck. Bradley later recalled the seriousness of the situation:

> By 10 July we faced a real danger of a World War I-type stalemate in Normandy. Montgomery's forces had taken the northern outskirts of Caen, but the city was not by any means in his control…My own breakout had failed. Despite enormous casualties and loss of equipment, the Germans were slavishly following Hitler's orders to hold every yard of ground. We, too, had suffered heavy casualties; about 22,000 in the British sector; over 30,000 in the American sector."[191]

[190] Quesada, interview by Long and Stevenson, K239.0512-838, 9.
[191] Stephen Hart and Leo Daugherty, *Battle of the Hedgerows: Bradley's First Army in Normandy, Jun-July 1944* (Osceola, WI: Zenith Press, 2001), 158.

In early July, Quesada was already hard at work improving his command; he did not have to look far for problems that needed fixing. The Allied inability to break through enemy lines frustrated both air and ground parties and made occasional friendly fire incidents all the more intolerable. This fratricide went both ways, with antiaircraft artillery units on the ground misidentifying aircraft and pilots doing the same from the air.[192]

When the Allies were gaining ground rapidly, these incidents seemed to be the cost of doing business. Now that the battle lines were static, however, Quesada and Bradley sensed the growing discontent between their air and ground forces. "An examination of these accidents reveals contributory negligence on the part of ourselves as well as the ground units," Quesada wrote to his command. "To avoid discord and lack of confidence between our forces…the error on our part must be avoided at all cost."[193] Quesada understandably wanted to maintain the outstanding working relationship with Bradley that he had labored so hard to achieve.

At the same time, Quesada received reports from O. P. Weyland that the XIX TAC was posting worsening scores as time went on. At one point, "Weyland declared that fully 80 percent of all requested missions were falling short of expectations, faulting in part IX TAC's lack of liaison with rear echelons in the air forces."[194] Like the fratricide incidents, part of Weyland's frustration was due to the slow pace of battle. Quesada's Air Support Parties were simply having a more difficult time finding enemy troops for Ninth Air Force pilots to attack. As long as a pilot can identify friendly troops, an active battle field it is usually a target-rich environment. This is simply because a mobile enemy is easier to spot. When the battle stagnates, however, a stationary and well-camouflaged enemy is exceedingly difficult to identify from both the ground and air. One day Quesada had a flash of insight that would simultaneously address both the friendly fire incidents and target identification problems.

Quesada visited Bradley and asked what he thought about putting a standard radio set inside a tank. Since 1942, General von Richthofen had been using mobile radios,

---

[192] History, IX Tactical Air Command, 1 June 1944-31 June 1944.
[193] Hughes, *Overlord*, 179.
[194] Chief of Staff Daily Journal, Ninth Air Force, 6 July 1944, 533.305-4, AFHRC.

placing them inside air liaisons' armored vehicles in order to communicate between his aircraft and forward observers. Yet this practice was largely unknown to the Allies and until now, no US officer seriously considered it. Quesada proposed that enable his forward observers, while sitting in a tank, to coordinate directly with overhead fighters. They could pass real-time friendly and enemy position information, thus both dramatically reducing fratricide and enhancing target acquisition. Bradley immediately warmed to the idea, "Terrific. You'll do that? Can you do that?"[195] "Yes," Quesada responded, "Furthermore, in order for that talk to be meaningful to the pilot, I'll put an aviator in the tank."[196] These men would become the first Forward Air Controllers (FAC) in the air force.

When Bradley attempted to send two Sherman tanks to Quesada's post for radio installation, however, the receiving depot sent them back twice. The baffled airmen simply could not understand what on earth they were supposed to do with them. "Get the hell out of here," one staffer told the tankers. "This is the Air Corps. What the devil would we be wanting with tanks?"[197] In addition to their surprise, airmen also took time to get over their service-centric mindset. "You have to remember the jealousy," Garland later explained. "These were two separate and distinct organizations—the Air Corps and the Army. Very jealous of each other."[198] Quesada was characteristically unconcerned with what he considered sibling rivalry. After sending the tanks back for the third time, Garland installed the air force type Signal Corps Radio-522 (SCR-522) Very High Frequency (VHF) radio sets and sent them back to the front.[199] Quesada was extremely pleased and wrote home, "My fondness for Buck Rogers devices is beginning to pay off."[200]

Quesada also encouraged Garland to develop better blind bombing techniques using the MEW radar. Garland worked diligently to integrate a Norden bombsight, salvaged from a crashed B-17, with a SCR-584, which he borrowed from a nearby artillery unit. He combined the two into a system that he then overlaid on top of a map

[195] Quesada, interview by Long and Stevenson, K239.0512-838, 147.
[196] Quesada, interview by Long and Stevenson, K239.0512-838, 147.
[197] Omar Bradley, *A Soldier's Story* (New York, NY: Holt, 1951), 338.
[198] Garland, interview by Ahmann, K239.0512-1332, 142.
[199] George, *Ninth Air Force*, 129.
[200] Carafano, *GI Ingenuity*, 158.

table. By moving the bombsight over the map as the MEW operator controlled the pilot flying over the ground, a radar operator could now call bomb release in spite of weather or darkness. Although not very accurate, the system was good enough to allow attacks through the weather within a few miles of friendly positions, much to the surprise and dismay of nearby German troops. P-38s flew "night intruder" missions throughout September and enjoyed mixed results. Unfortunately, battle damage was difficult to assess at night or through the weather. They logged destruction of a marshalling yard along with two locomotives, but lost one airplane to enemy flak and another to friendly fire.[201] Still, the technology had its uses; on more than one poor weather day, "puzzlement turned to terror" as unsuspecting Wehrmacht soldiers scrambled for cover, unable to comprehend exactly how the pilots found them through the overcast.[202]

The merging of these two technologies had ancillary benefits that nobody had foreseen. For example, on one occasion day fighters on a blind-bombing mission were coming off target. Quesada was just leaving the radar hut when he overheard nearby medium bombers on the radio report a missed rendezvous with their escort. Quesada went back inside and asked the controller to re-direct the fighters to rejoin on the bombers. Prior to the new radar system, this on-the-fly rejoin would have been nearly impossible: escort fighters needed a pre-briefed rendezvous point. In this case and countless others, the fighters successfully rejoined with the bombers and yet another innovative technique was born.[203]

Controllers could also occasionally save aircraft whose pilots thought were beyond redemption. For example, a P-38 over France had one engine shot out and the pilot called the command center; if they could not get him over friendly territory soon he would have to bail out. A fix showed him 20 miles from the friendly troop line, "but the controller lied a little bit after finding the pilot had plenty of altitude" and told him he was only 15 miles out. The controller convinced the pilot to stay with his aircraft. After the P-38 was over friendly territory, the controller vectored him to the nearest airfield,

[201] George, *Ninth Air Force,* 240-241.
[202] Hughes, *Overlord,* 186; IX TAC History, 536.02, June-Sep 1944.
[203] Hughes, *Overlord,* 188.

saving both the pilot and his aircraft. Once on the ground the pilot called the controller and personally thanked him. There were many similar stories.[204]

The ability to redirect individual fighters while airborne heralded a new era of close control; this capability would grow throughout the war and beyond. This and other innovations were possible because Quesada maintained a command atmosphere that promoted original thought in ways that not even he had fully considered. Moreover, Quesada maintained as much of a working knowledge of these innovations as possible and even Garland commented, "Quesada was one of the very, very few commanders that had any idea about communications. He backed me on everything I ever wanted to do."[205] The fact that Quesada had at least some idea of what Garland was talking about was no doubt a factor in his granting broad support.

Quesada spent much of this time flying from airfield to airfield, making sure his troops stayed well-informed and combat-ready. According to Captain John Hudson, a P-47 pilot in the 371st Fighter Group and later Lieutenant General, Quesada "was always checking up on us."[206] One a particular visit when Quesada flew in to pin some air medals on pilots, he noted Hudson's group still had flight officers. He turned to Colonel Bing Kleine and said, "I don't want to come down here anymore to pin any medals on any flight officers. You commission them, get them to do the thing, and make them lieutenants." Quesada did want non-commissioned officers flying in combat. He got his way and, as Hudson noted, "that [sic] was the last flight officer pilots in our outfit."[207]

Quesada's command made several other technical innovations, such as arming fighters with forward-firing rockets against troops and tanks hiding in hedgerow country as well as 100-pound bombs against soft targets such as troops to reduce cratering effects. Experimenters at TAC also developed napalm, as it later turned out in parallel with American-based research labs, which had a tremendous psychological effect on enemy

[204] IX TAC History, 536.02, June 1944.
[205] Garland, interview by Ahmann, K239.0512-1332, 147.
[206] John Hudson, interview by James Hasdorff, 16 January 1987, transcript, K239.0512-1737 (Maxwell AFB, AL: USAF Historical Research Center, 1997), 23-24.
[207] Hudson, interview by Hasdorff, K239.0512-1737, 24.

forces.[208] Quesada added napalm to his already well-developed ground attack techniques and his P-38s would occasionally deliver them on enemy positions.[209]

Unfortunately, it would take more than technology to break through German lines. The first two attempts at COBRA on 24 and 25 July highlight the steep learning curve of tactical bombing near friendly ground forces. Prior to the ground offensive, AEAF arranged for a massive initial bombardment of enemy positions south of St. Lo which involved not just Quesada's TAC, but hundreds of medium- and heavy-bombers from Eighth AF. Unfortunately, bomb damage on German forces was relatively light as many Allied bombs fell on American positions north of St. Lo. The US Army's 30th Infantry Division took the brunt of the attack, "with sixteen killed and four times that number wounded.[210] Exploiting the already strained Allied situation, "SS and paratroops organized the most serious resistance which the division encountered."[211]

The instances of fratricide were bad enough alone, but the sheer mass of sorties allocated to close support during the attempted breakouts put the proven interdiction mission on hold. By shifting to these failed close support missions, the Allies were easing the pressure off the Germans. This is significant as bridges, rail-cutting, and the destruction of rail cars ranked among the most lucrative targets. Continued daylight attacks by fighter-bombers had "forced the enemy to limit his marches to the hours of darkness and to disperse his columns over secondary roads." In July, it was considered essential "that the rail bridges on the periphery of the area be denied to the enemy in spite of his vigorous efforts to effect their repair." Quesada's IX TAC now devoted the bulk of "the aircraft under its operational control to missions closely coordinated with the ground effort" of First Army, which left many interdiction missions unfilled. This meant IX Fighter Command had to conduct the majority of interdiction missions in France. At the time, however, the Allies considered the decisive point to be the breakout and they focused their efforts accordingly. Such are the gifts of hindsight.[212]

---

[208] IX TAC History, July 1944, 536.02, AFHRC.
[209] Stephen Wishnevsky, *Courtney Hick Hodges: From Private to Four-Star General in the United States Army* (Jefferson, NC: McFarland and Company, 2006), 99, and George, *Ninth Air Force,* 124.
[210] Craven and Cate, *The Army Air Forces in World War II,* Vol. III, 230.
[211] George, *Ninth Air Force,* 127.
[212] George, *Ninth Air Force,* 116, 147, and 138.

In the aftermath of the failed COBRA attempts, Quesada identified two major points of failure. First, hesitation had cost lives. In the wake of poor weather, Leigh-Mallory went back-and-forth deciding whether to let the bombers go. When he canceled the mission for the second time, many of the 1,586 bombers were well beyond radio range.[213] Meanwhile, infantry units along the front only received word that the strikes were canceled, not that they were back on. They moved from their protective cover into the open, closer to German positions. The gross errors on 25 July alone cost 102 American lives and 380 wounded.[214]

Second, Quesada later realized the east-west road leading to St. Lo, which was supposed to demarcate enemy from friendly positions, was more difficult to identify from the air than previously thought. A light wind from the south added to the confusion and bomb smoke from prior attacks slowly drifted north towards American positions. Subsequent attacks, which were supposed to get gradually closer to the enemy, instead walked their bombs towards friendly positions; commanders looked on in horror.[215]

The second attempt at COBRA on 25 July had completely unsettled the Germans, however, and "Lightning Joe" Collins decided enough was enough and it was time to press the attack. In a bold historic move, Collins advanced everything including his armored reserve into the fight.[216] When staff members at IX TAC heard of the plan, they immediately set about developing a combined air-ground plan to support the armored movement. Collins' leading tanks had Quesada's radios and forward air controllers inside, and IX TAC flew its first armored column cover missions. The results were downright astounding. Hundreds of Thunderbolts, given precise direction from Quesada's FACs, blasted everything in their way. The most important targets were Tiger tanks and 88mm flak guns, which the Germans employed in direct fire against Allied tanks. Sherman tanks, inferior in both armor and weaponry to the Tiger, normally had to execute ambush tactics in order to knock them out. Now supported by Quesada's

[213] Craven and Cate, *The Army Air Forces in World War II*, Vol. III, 230.
[214] Craven and Cate, *The Army Air Forces in World War II*, Vol. III, 234.
[215] Craven and Cate, *The Army Air Forces in World War II*, Vol. III, 234.
[216] Craven and Cates, *The Army Air Forces in World War II*, Vol. III, 241.

fighters, Sherman tanks could sit back and watch Tigers "burning, one spewing shells like a 'July fourth pinwheel.'"[217]

One instance in late July testifies to the efficacy of Quesada's armored column cover. An American armored column was heavily outnumbered; at one point, thirteen German tanks surrounded a single Sherman. The covering flight saved the lone tank by attacking then dispersing the enemy. The lead tank radioed the flight leader, "Is the road ahead safe for us to proceed?" The pilot responded, "Stand by and we'll find out." The flight of four P-47s conducted a cursory search, which turned up four enemy tanks down the road. The Thunderbolts soon put them out of action, and returning to the friendly column radioed, "All clear, proceed at will."[218]

Quesada's IX TAC planned these missions in advance with Bradley's First Army; their efforts produced many similar accounts. Supported by armored-column cover, Collins' thrust approached a rout. By 27 July, the few German positions left standing were by-passed and isolated by the rapidly advancing American forces. In the midst of the excitement, one ground general took the radio and shouted, "Go to it! Get one for me!"[219] From 25 to 31 July, IX TAC flew 9,185 sorties and claimed 384 tanks, 2,287 motor transport, 33 railroad or highway bridges, 194 railroad cars, 125 horse drawn vehicles, and 142 artillery and gun emplacements destroyed.[220]

The intense flying operations took a tremendous toll on the dirt strips IX TAC was using and "it was fortunate that the St. Lo break-through came when it did because the older airfields in the beach head area begin showing signs of deterioration. Fortunately, the new airfields in the Alençon area permitted the evacuation of some of the old sites."[221] Quesada's armored-column cover tactics may not have been decisive, but they were certainly instrumental in the Allied break-out from the stalemate.

O.P. Weyland and his XIX TAC shared many of Quesada's major innovations and often toured Quesada's headquarters to exchange ideas.[222] Weyland opened a joint operations center with the Third Army and forged a relationship with General George

---

[217] Hughes, *Overlord*, 220.
[218] George, *Ninth Air Force*, 129-135.
[219] Craven and Cates, *The Army Air Forces in World War II*, Vol. III, 242.
[220] George, *Ninth Air Force*, 129-135.
[221] History, IX TAC, 1 August 1944-31 August 1944.
[222] Quesada, interview by Long and Stevenson, K239.0512-838, 174.

Patton very similar to the one Quesada enjoyed with Bradley.[223] For example, one time Patton called Weyland in to his office and remarked how his troops were rapidly advancing. "God," Patton said, "They were just moving like anything. The only problem is that there are dead Germans and artillery and trucks and what not all over the roads."[224]

Fortunately, Patton kept the bulldozer blades on the front of his tanks and simply pushed the wreckage aside. He continued, "My people tell me that your fighter-bombers did that." Weyland responded, "Yes, that's right. That's part of our racket." "Hot damn," Patton said, pulling out a full bottle of bourbon, "How about a drink?" They finished the bottle right then.[225] This anecdote is typical of Patton and Weyland's relationship. On Patton's final General Order number 98, titled "Soldiers of the Third Army, Past and Present," he finds space on the single page address to praise Weyland. "Nor should we forget our comrades of the other armies and of the Air Force, particularly of the XIX Tactical Air Command," Patton reflects, "by whose side or under whose wings we have had the honor to fight." This is high praise coming from Patton.[226]

The Germans, on the other hand, lamented the Allied success and indirectly acknowledged both Quesada's and Weyland's role. A captured junior officer of the German 363d Infantry Division complained, "You have bombed and strafed all the roads causing complete congestion and heavy traffic jams. You have destroyed most of our petrol and oil dumps, so there is no future in continuing to fight."[227] Even Adolf Galland, *General der Jagdflieger,* acknowledged IX TAC's effect on an attempted German break-out at the Falaise pocket in mid-August. "The attack failed because of unusually lively activities on the part of enemy fighter-bombers."[228]

Instead of allowing the stagnating situation to drag on his command, Quesada instead seized upon an opportunity to change forever how air and ground units integrate to perform CAS. The slow pace of battle and fratricide prior to the COBRA breakout

---

[223] Craven and Cates, *The Army Air Forces in World War II,* Vol. III, 629.
[224] [224] O. P. Weyland, interview by James Hasdorff and Noel Parrish, 19 December 1974, transcript, K239.0512-813 C.1 (Maxwell AFB, AL: USAF Historical Research Center, 1984), 75.
[225] Weyland, interview by Hasdorff and Parrish, 19 December 1974, 75.
[226] George Patton, "Soldiers of the Third Army, Past and Present," General Order 98, 9 May 1945, 168.7104-99 (Maxwell AFB, AL: USAF Historical Research Center, 1945).
[227] Ninth Air Force Interrogation Unit, "Assessment of Air Attack as Determined from Prisoners of War and Enemy Commanders," 533.4501-9, AFHRA.
[228] Adolf Galland, *The First and the Last: The Rise and Fall of the German Fighter Forces, 1938-1945,* (New York, NY: Henry Holt and Company, 1954), 289.

weighed heavily on the minds of many Allied leaders. Quesada remained positive, however, and instead channeled his ample energy into developing an innovative technological solution.

Through the seemingly simple act of placing some pilots armed with radios in the tanks of an armored column, Quesada revolutionized the effectiveness of CAS. Fratricide on both sides decreased immediately as both air and ground forces could now directly talk to each other. Further, the time-to-kill chain shortened dramatically; instead of relaying requests back to headquarters and waiting on aircraft to arrive incommunicado, tankers could now call out targets right in front of them and their column, and cover aircraft would immediately destroy them. The success of the COBRA breakout is due at least partly to Quesada's ingenuity.

Finally, Quesada personally continued to grow in maturity as an air commander. For example, all too often air commanders praise the pilots and unintentionally forget the rest. In a memorandum to the 70th Fighter Wing after COBRA, Quesada made a point to recognize those who were truly responsible for its tremendous success:

> There is no use expressing my appreciation for what you all have done these past three days because the results, I feel, are a just reward. A real breakthrough has been accomplished and "by gosh and by gum" you have all done more than your share. I just cannot express my gratitude in words and just say a simple thanks to every man and officer in the combat units, service units and ancillary units for what they have done. My appreciation goes to every mechanic, cook, MP, crew chief, radio operator, armorer, intelligence officer, wing commander, controller, boys in the aircraft warning service, VHF operators, telephone operator, group commanders, squadron commanders, and to the boy with the stick in his hand. You have all done a grand job.[229]

Another Stalemate at the Siegfried Line

In August, the Allied thrust seemed unstoppable as it overtook the majority of Brittany by 1 September. The IX TAC continued its exceptional support of the First Army's advance and flew 378 missions for 12,305 total sorties during August: "Armored

[229] Memorandum from Commander, IX TAC, to 70th Fighter Wing, 30 July 1944, WG-70-HI (Maxwell AFB, AL: USAF Historical Research Center, 1944).

Column Cover" and "Armed Reconnaissance" accounted for the majority.[230] Quesada's close cooperation with the army continued to pay off. In late August, Quesada's fighter-bombers stopped a German lunge against Avranches and in turn "threatened to annihilate his armies in Normandy."[231] Both First Army and IX TAC Headquarters struggled to keep up with their rapidly advancing forces. In fact, the biggest problem "in keeping up with the fleeing enemy was that of communications," as signals officers had trouble laying their land lines fast enough.[232]

The advance continued east through France and only slowed in mid-September when the majority of Allied ground forces ran against the Siegfried Line along the western border of Germany. Both Allied leaders and Quesada would once again face the limits of airpower. As ground forces ran up against the fortified German defensive perimeter, the character of both the ground and air wars shifted "from pursuit to position warfare." Consequently, as requests temporarily slackened, the average number of close support sorties decreased and armed reconnaissance against deep targets correspondingly increased.[233] The Germans were now fighting for survival; they entrenched themselves in concrete fortifications armed with gun emplacements. If morale bombing had enjoyed any success against fortifications during the battle for Cherbourg, it would not now; the Germans would not so easily surrender their own soil. Furthermore, the Allies had overstretched their own logistical lines. The momentum that carried the Allies across France splashed against the *Westwall* like a bucket of water.

Quesada was working alongside General Courtney Hodges, as Bradley was now commander of 12th US Army Group. The legendary daily cooperation between Quesada and Bradley was no more. Quesada, true to his nature, forged a solid relationship with Hodges and pressed on. His guiding principle was commitment to the effort, not to a single person. Quesada and Hodges worked well together, but struggled to fix their supply problems and find an air-ground plan that would break the stalemate that had now

[230] George, *Ninth Air Force,* 164.
[231] George, *Ninth Air Force,* 172.
[232] History, IX Tactical Air Command, 1 August 1944-31 August 1944.
[233] George, *Ninth Air Force,* 237.

developed. Without realizing it at the time, the problem was not so much their plan as a limitation of their weapons and aircraft.[234]

Quesada's IX TAC was a significant part of the new interdiction campaign aimed at starving the Germans out of their defensive positions. Designed to "isolate the battlefield west of the Rhine," Ninth Air Force committed massive resources in support of the plan through October. IX TAC was assigned seven lines of communication extending west from the Rhine, with crossings at Düsseldorf, Köln, Remagen and Koblenz. The designated target sets prioritized railway and road bridges along with railway line cuts. "Full success could be achieved only if all vital lines were cut and kept cut."[235]

In addition to supporting mandated interdiction missions, through December 1944 Quesada worked closely with Hodges to develop various plans to break through: Operation QUEEN was by far the most ambitious. QUEEN was a joint air-ground effort aimed at penetrating east of Aachen towards the Roer and Rhine Rivers. Unfortunately, the plan was plagued with bad weather from the start, which pushed execution from 11 to 16 November. Squadrons of IX TAC aircraft, cooperating directly with Air Support Parties, "struck at flak positions, barracks, and concentrations of troops and armor." Although fighter-bombers conducted several successful attacks on occupied towns and villages, the Germans expected the attacks and fortified their positions accordingly. The attack results were disheartening for Quesada and Hodges.[236]

Casualties from QUEEN among German forces, in the words of one post-action summary, were "remarkably light."[237] Even the bombs that were direct hits on fortified positions mostly just chipped concrete or at best exposed rebar. "The blasts were tremendous, and I never experienced anything like it," recounted one German. "I organized shows of fireworks before the war, and that is the only thing I can compare the blast of bombs to."[238] Regiments of the German Forty-seventh Division, who received the brunt of the attacks, suffered only 3 percent casualties, with other regiments taking

---

[234] Quesada, interview by Long and Stevenson, K239.0512-838, 174.
[235] George, *Ninth Air Force*, 256-264.
[236] George, *Ninth Air Force*, 303-306.
[237] Ninth TAC, "The Invasion Air Force," January 1945, 533.306-1 (Maxwell AFB, AL: USAF Historical Division, Air University, 1944).
[238] Hughes, *Overlord*, 268.

only 2 percent.[239] When Allied forces advanced, it became clear that airpower had not delivered what was expected, and the stalemate continued.[240]

Quesada struggled to makes sense of the poor results and strove to improve the effectiveness of air support missions. In the end, though, it became clear that his units were operating at close to peak efficiency. As this was prior to the development of precision guided munitions and bunker-busting munitions, Quesada's air attacks would never achieve their desired effect. Laser-guided Bombs, Targeting Pods, Inertially-Aided Munitions, and Maverick missiles were decades away from development. Unguided GP bombs simply did not have the accuracy and penetration capability necessary to dislodge the Germans from their fortifications. As there was no contemporary airpower solution to the problem, it looked like ground forces would have to slug it out largely on their own. "We are not everything in this war," Quesada acknowledged. "We've had a few kicks in the teeth lately…I think we sometimes ask too much of the fighter-bomber boys."[241]

Weyland's XIX TAC, supporting Patton's Third Army south of Quesada, was stuck against the Siegfried line in a similar situation. On 9 December, the two generals made the best of the situation and gave an interview to a war correspondent where they discussed how successful their air-ground cooperation was up to that point. Patton began by highlighting how crucial XIX TAC was to his operations. "No operation in this Army is contemplated without General Weyland and his staff being present at the initial decisions as to where they are to go and how they are to go. Our success has been the results of bringing the air and ground together from the beginning and having them work in consonance." When asked, Patton acknowledged the limitation of airpower against the hardened German fortifications. He admitted it was slow going. In order to dislodge them his troops had to, "Shoot at the eye slits and then put a keg of dynamite at the back door."[242] Both Quesada and Weyland agreed there was no simple solution and what

[239] Hughes, *Overlord*, 268.
[240] 70th Fighter Wing History, July 1944, WG-70-HI (Maxwell AFB, AL: USAF Historical Division, Air University, 1944).
[241] Hughes, *Overlord*, 269.
[242] "Conference between General Patton, General Weyland, and Third Army Correspondents," 9 December 1944, 167.7104-101 (Maxwell AFB, AL: USAF Historical Research Center, 1944), 1 and 6.

happened next both took the Allies completely by surprise and rendered the stalemated fight irrelevant.

What finally broke the stalemate along the Siegfried line on 16 December 1944 was not Allied action, but rather the final German thrust westward: the Battle of the Bulge was on. This massive German assault put the Americans on the defensive for the first time since they landed in Normandy. For Quesada's part, this defensive warfare was both a blessing and a curse. IX TAC would return to the armored-column cover tactics that were so effective during the COBRA breakout. The main difference was that the Germans were now on the offensive and they dictated the pace of battle.

The difference in which side was driving the fight is important. When the Allies were on the offensive and needed air support, if the weather was poor they could usually delay their attack for a few days and wait for it to improve. They had no such alternative now as they were on the defensive and could not back out of the fight without conceding real estate. The Germans knew this and intentionally exploited the fog and low overcast. The poor weather provided precious cover for their westward thrust and rendered Allied CAS almost useless. This was an innovative counter to Allied air superiority; since the Luftwaffe was all but defeated, the Germans called on nature for air cover.

On 17 December, with *Kampfgruppe* Peiper barreling towards Liege in the north, Quesada had to make one of his most difficult decisions if he was going to help stop the German offensive. The weather was so bad that day everyone "looked out the windows and one sergeant made the old crack 'On a day like this even the birds walk.'" After asking Colonel George Peck of the 67th Reconnaissance Group for volunteers, Quesada sent P-51s into clouds and fog. The valiant fighter pilots flew their Mustangs almost blind at treetop-level, eventually locating approximately sixty tanks and armored vehicles. "The Germans were so surprised to see us that they didn't fire until the last run," one of the pilots recalled.[243] Tempting fate, 365th Group Commander Colonel Ray Stecker sent four-ship flights with twenty minutes of separation into the soup after the enemy column. These pilots displayed great physical courage and after 300 sorties somehow managed to locate and destroy over a dozen tanks, thirty-two armored and

[243] IX TAC History, "Achtung Jabos," 536.04, AFHRC.

fifty-six motor vehicles, a substantial achievement given the austere conditions.[244] Quesada's gamble paid off and his IX TAC successfully thwarted *Kampfgruppe* Peiper's drive towards Liege.[245]

At the same time, the MEW radar formed the centerpiece of Quesada's command and control system. In fact, in retrospect it was one of the earliest forms of centralized control of American tactical air forces. The MEW was the IX TAC "Radar equipped" eyes and along with "VHF equipped" ears could "ceaselessly follow 300 mile-an-hour planes as they sweep across a battle area of 7200 square-miles and which may contain over 100 aircraft."[246] This system provided "the commanding general or his representative a complete and up-to-the-minute picture of the air war together with instantaneous communication to every aircraft in the area. What more could any General ask?"[247]

Quesada's relentless commitment to supporting the scrambling ground effort was well-known outside of US circles. The German thrust had effectively split the Twelfth Army Group in two. Much to Bradley's dismay, Eisenhower placed the northern half, which included Hodges' First Army, under Montgomery's command. This temporary shift in command also officially moved Quesada's IX TAC under "Maori" Coningham's British Second Tactical Air Force.[248] In a move that speaks highly of the character of both airmen, "Coningham placed all his British aircraft at General Quesada's disposal, to be used in a plan of his design." This was logical as Quesada was, "closest to the scene of activity, was in the best position to draw up the plan and exercise close control of the important air phase of the Bulge Battle."[249] Although this move was logical, commanders do not lightly transfer command, especially to someone of another nationality. Coningham remembered Quesada's commitment and initiative in North Africa and his decision was a bright spot of trust among the Allies.[250]

---

[244] Craven and Crate, III, 688.
[245] Hughes, *Overlord*, 279.
[246] Ninth TAC, "Ninth TAC History, June 1944," AFHRC, 536.02
[247] Ninth TAC, "Ninth TAC History, June 1944," AFHRC, 536.02
[248] Craven and Crate, III, 686.
[249] Memorandum "Concerning Allied Air Effort During the Battle of the Bulge," 28 September 1945, 533.4501-5 (Maxwell AFB, AL: USAF Historical Research Center, 1945).
[250] Hughes, *Overlord*, 281.

Allied forces slowly repelled the German attack, thanks in no small part to Quesada's IX TAC. During the Ardennes counteroffensive in January, Ninth Air Force claimed 7,706 motor transport, 550 tanks and armored vehicles, 101 locomotives, 3,094 railroad cars, 1,125 buildings, 234 gun positions, 10 bridges, 556 rail cuts, and 207 road cuts.[251] Quesada's IX TAC, while not as effective against fortified positions, when in the air-tank support role wreaked havoc on maneuver forces in the open. Quesada himself would occasionally fly these combat missions in a "player-coach" role; he saw no better way to increase his battlefield situational awareness.[252] Adolf Galland once again tipped his hat at the IX TAC's success. "The Luftwaffe received its death blow at the Ardennes offensive…our numerical strength had no effect. It was decimated while in transfer, on the ground, in large battles, and especially during Christmas, and was finally destroyed. In this forced action we sacrificed our last substance."[253]

With the war in its final stages, Quesada wisely directed his staff to "write these lessons down for future generations."[254] Indeed, his innovations still influence CAS operations today. Quesada's air-tank system evolved into the Joint Terminal Attack Controller (JTAC) mission. JTACs are highly valued assets in military operations throughout the world and are key contributors to current overseas contingency operations in both Iraq and Afghanistan. The MEW and SCR-584 radars, which enjoyed mixed success when used to direct fighters on blind bombing runs, have evolved through various forms into the airborne microwave radars that almost all advanced fighters now use.

Quesada passed on much of the credit for his success to ULTRA, a combination of technology and intelligence. The ULTRA messages were highly-classified decrypts of intercepted German Army, Air Force, and Navy signals. The Germans considered these messages important enough that they used their high-grade Enigma cipher to encrypt them.[255] An Allied team in Bletchley Park, Buckinghamshire, first broke these Enigma ciphers in August 1941; the Germans considered the code impregnable and never

---

[251] Craven and Crate, III, 710.
[252] Ninth TAC, "Ninth TAC History, March 1945," AFHRA, 536.02.
[253] Galland, *The First and the Last*, 312.
[254] Hughes, *Overlord*, 293.
[255] *Ultra: History of US Strategic Air Force versus German Air Force*, United States National Security Agency, (Washington, DC: National Security Agency, 1945), 3.

discovered the breach in their operational security.[256] The Allies took extreme care to maintain this illusion and only released messages to high-level commanders when an operation was of the utmost importance. Quesada acknowledged the crucial nature of these messages:

> They were particularly valuable. They would tell us where certain units were. They would tell us where they might be going. They would tell us in one way or the other what the state of their alert was. They would often tell us what the effect of certain actions of ours was on them. It would often do that. That was a common source of information, which, of course, would often make us grin. Sometimes be embarrassed, too, I might add. And so, this information was not only to inform us what was happening at the time, but would confirm the effect of our action on prior days and prior weeks. It wasn't at all uncommon for us to get a verbatim copy of a message through the Ultra system that was sent to the German field commanders, Army group commanders as an example, and from Hitler and his entourage, and we would often get the message before the field commanders got it. And you could often tell that by the field commander's response, "I got your message yesterday afternoon," but we would have had it yesterday morning. That happened time and time again. It was a very helpful thing.[257]

Yet Quesada's personal attitude regarding air-ground cooperation was perhaps more important than his exploitation of any breakthroughs in either technology or intelligence. Eisenhower, although not citing Quesada by name, was clearly thinking of him when discussing the new bridge between the US Army and USAAF. "If you could see your way clear to do it, I think you should make a visit here at the earliest possible moment," Eisenhower urged George Marshall in the spring of 1945. "You would be proud of the Army you have produced. In the first place, the US ground and air forces are a unit; they both participate in the same battle all the way down the line from me to the lowest private. I can find no evidence whatsoever of any mutual jealousy, suspicion or lack of understanding. In fact, I know of one or two Major Generals in the Air Force that one of my Army commanders would accept as Division Commanders today."[258]

Many other commanders have praised Quesada's relentless support of ground forces, and total absence of allegiance to party lines at the expense of the larger picture.

---

[256] Rebecca Ratcliff, *Delusions of Intelligence: Enigma, Ultra, and the End of Secure Ciphers* (New York, NY: Cambridge University Press, 2006), 2-3.
[257] Quesada, interview by Long and Stevenson, K239.0512-838, 7.
[258] Hughes, *Overlord,* 295.

Major General Matthew Ridgeway of the XVIII Airborne Corps told Quesada, "Your people did for us all that could be asked on all occasions." J. Lawton Collins wrote, "to express my deep appreciation for the part played by the Air Force, particular the fighter-bombers."[259] Perhaps the best compliment comes from the bottom rung on the ladder as Quesada's IX TAC forged a close relationship on which army grunts could depend during dark times. On one day in the fall of 1944, Lieutenant Philip Reisler of the US 2nd Armored Division in Vire, south of St. Lo, emerged from his tank. Glimpsing clear skies at dawn he said, "It looks like we're going to have air today."[260] The last words of this chapter belong to the man who received Quesada's unrelenting support during the toughest days of the Normandy campaign. Omar Bradley offers words of praise that rarely emanate from outside service lines:

> He was a brilliant, hard, and daring air-support commander on the ground. He had come into the war unencumbered by the prejudices and theories of so many of his seniors on tactical air. To Quesada the fighter was a little-known weapon with vast unexplored potentialities in support of ground troops. He conceived it his duty to learn what they were. In England, Quesada first experimented with heavier bombloads for fighters by hanging their wings and bellies with more and heavier bombs. He even converted a squadron of fast, sleek Spits into fighter bombers. When the British protested this heretical misuse of the fighter in which they took such pride, the imperturbable Quesada retorted, "But they're not your planes anymore—they're mine. And I'll do anything I want to with them."[261]

[259] Hughes, *Overlord*, 295.
[260] Hastings, *Overlord*, 272.
[261] Carafano, *GI Ingenuity*, 156; Omar Bradley, *A Soldier's Story* (New York, NY: Holt, 1951), 337.

Chapter 3

Generalfeldmarschall Wolfram von Richthofen

Death is nothing, but to live defeated and inglorious is to die daily.

-- Napoleon Bonaparte

WEST OF WARSAW, POLAND, 4 SEPTEMBER 1939. Only three days into the invasion of Poland *Generalleutnant* Wolfram von Richthofen grew frustrated with poor communications between air and ground forces. The "army communications are worse than ours," he noted in his diary.[262] Finally he had enough. Leaving his chief of staff, *Oberstleutnant* Hans Seidemann, to run operations, von Richthofen stormed out of his headquarters, jumped into his Fieseler Stork, and barreled towards the front. After landing near the 1st Panzer Division's headquarters under heavy enemy fire, von Richthofen sought out the division commander. The army general explained how his lead units had run into heavy Polish resistance and his own artillery was stuck in mud to the rear. After quickly sizing up the situation, von Richthofen walked to one of the few working army communications sets, contacted Seidemann and ordered his Hs 123 group to attack Polish units in front of the 1st Panzer Division. The Henschels were soon overhead and shattered the counterattack, sending the remnants of the Polish units scurrying for cover. With the way now clear, the 1st Panzer Division resumed its drive towards Warsaw. Although von Richthofen did not prefer to dispatch his aircraft as a substitute for artillery he did what was necessary to support the army at the decisive point: at the time 1st Panzer was the spearhead of the entire campaign against Poland. Von Richthofen's willingness to subordinate his personal views on airpower to accomplish the mission earned him immeasurable respect and admiration up and down the army ranks.[263]

---

[262] James Corum, *Wolfram von Richthofen: Master of the German Air War* (Lawrence, KS: University Press of Kansas, 2008), 171.
[263] Corum, *Wolfram von Richthofen*, 171-172.

Personal Background

Wolfram von Richthofen was born on 10 October 1895 to *Freiherr* (Baron) Wolfram von Richthofen and Therese Gotz von Olenhusen. The second of four children, Wolfram spent his childhood at the family estate of Barzdorf, near Striegau in Silesia, Prussia. Young von Richthofen was of Silesian nobility, which went back over 350 years. Silesia is located mostly in present-day Poland, with parts in Germany and the Czech Republic. The Richthofen family started with Paulus Schulteis (1521-1565), a Lutheran preacher and scholar during the beginning of the Lutheran Reformation. Schulteis was a member of the elector's court of Brandenburg, which granted him a patent of nobility and coat of arms. Schulteis was childless and as was common during the time he adopted a son to carry on his name. His adopted son Samuel Faber would father Tobias Pretorius, who moved the family to Breslau in Silesia during the Thirty Years War where they would remain for the next 300 years. Tobias Pretorius Germanized the family name to Richthofen, a name that would later gain world-wide recognition.[264]

Wolfram enjoyed a privileged childhood. The family estate in Barzdorf contained an impressive eighteenth-century mansion and 875 acres of land, with cropland occupying just over half and forest making up the rest. A vast array of servants and workers toiled throughout the mansion, barns, workshops, stables, and fields. Wolfram learned to ride and hunt at an early age and developed strong legs through constant exercise on the family estate.[265] Wolfram's parents, loving yet strict, made sure their children had the best education. At the time Germany had one of the best public education systems in the world; Wolfram's parents sent him to elementary school in Striegau so could benefit from it. In general Wolfram was a good student. He did have poor language skills, however: something he would later overcome with great pride when working with the Italians and Spanish.[266]

---

[264] Corum, *Wolfram von Richthofen*, 28-29.
[265] Gordon Thomas and Max Witts, *Guernica: The Crucible of World War II (*New York, NY: Stein and Day, 1975), 27.
[266] Corum, *Wolfram von Richthofen*, 37.

When twelve, Wolfram attended *Gymnasium* instead of a cadet school as his parents did not want to push him into a military career. *Gymnasium* is an elevated type of European school that provides an education comparable to US college preparatory high schools. By sending him to *Gymnasium*, Wolfram's parents both emphasized a higher education and left the decision to join the military up to him. This is significant as many contemporary nobles attended cadet school as a minimum and usually retained their reserve commission for its significant social benefit. Wolfram chose a military career for himself after completing *Gymnasium*. This likely made him a better military officer than if his parents had chosen for him.

Aside from attending *Gymnasium* instead of a military academy, Wolfram von Richthofen had a typical upbringing for a noble in Silesia. His proud heritage likely set high expectations for the young noble and granted him an aura of destiny. He would not disappoint. As did his cousin Manfred, Wolfram would make the von Richthofen name famous not only throughout Germany, but in the annals of history.

Early Military Experience and the Great War

In 1913, eighteen-year-old Wolfram enrolled in the Prussian army officer course, located at the cadet academy in Gross Lichterfeld, Berlin. Although von Richthofen joined the service entirely on his own volition, this was a common choice for a young Prussian noble. In Prussia, joining the "officers' mess" was essential if a young man wished to have a successful career in any sphere of public service."[267] Perhaps even more important to a young man, the opposite sex was highly attracted to the glamour of army uniforms. Young German girls "willingly paid up to six marks, according to the smartness of the uniform, when they wanted to go out with them on Sundays."[268]

During his one-year course of military study, von Richthofen interviewed for a position with the 4th Hussars cavalry regiment. Not only was the cavalry one of the most prestigious arms of the German military, but von Richthofen's love of horses and hunting played a role in his choice. According to Prussian law, a majority of the gaining regiment's officers had to vote in any potential officer. Not even the Kaiser himself

[267] Martin Kitchen, *The German Officer Corps, 1890-1914 (*Oxford: Clarendon Press, 1968), 119.
[268] Kitchen, *The German Officer Corps*, 120.

could waive this rule. Von Richthofen had little reason to worry; the mostly noble 4th Hussars hailed form the Silesian city of Ohlau and Wolfram was exactly the kind of officer they were looking for. As was common throughout Prussia, many nobles took up with regiments near their homes in order to maintain a close bond to their family, friends, and social life.

In August 1914, soon after von Richthofen joined the officer ranks, the 4th Silesian Hussars Regiment went into combat; World War I was in full swing. The 4th Hussars, part of the 12th Cavalry Brigade and 5th Cavalry Division, helped the German Third Army cross the Meuse at Dinant, Belgium. Acting as the eyes of the army while the Germans closed with the French, the 5th Division denied the French cavalry the freedom to perform their similar mission by pushing them back across the Meuse and screening the Third Army's advance. The cavalry continued to support the army's advance through France until reaching the Champagne region in September, when the western front began to harden.[269]

As mobile fighting diminished and trench warfare set in, the 5th Cavalry Division dug in, sent their horses to the rear, and filled in the trenches as ordinary infantry. Although von Richthofen was likely disappointed, the German army was slowly coming to terms with "the deadliness of machine guns," the "tactical effect of airplanes," and most important, "the devastating effect of the new artillery."[270] In any case, von Richthofen tasted battle and gained experience, earning the Iron Cross Second Class on 21 September 1914 in recognition of his bravery and leadership over the past two months.[271]

Von Richthofen, seeing the futility of horse cavalry as a maneuver force, knew that in order to be successful he had to move on. Manfred von Richthofen, Wolfram's cousin, had been the first von Richthofen to trade in his spurs for the German air service in May 1915. Manfred had quickly gained worldwide fame as an ace and earned the coveted Pour le Mérite, Germany's highest decoration, in early 1917.[272] The "Red Baron" seemed to be personally decimating the British Royal Flying Corps, and his

---

[269] John Buchan, *A History of the Great War* (Boston, MA: Houghton Mifflin Company, 1922), 123-124.
[270] Buchan, *A History of the Great War,* 116-117.
[271] Corum, *Wolfram von Richthofen,* 49.
[272] Manfred Freiherr von Richthofen, *The Red Battle Flyer* (New York, NY: Robert M. McBride and Company, 1918), 128.

success was not lost on Wolfram. Manfred's brother Lothar had also transferred to the *Luftstreitkräfte* and likely shared stories of his exploits on the western front.[273]

Meanwhile, Wolfram's 4th Hussars had moved east in 1915 to support the First Austrian Army advances in Poland and Galicia, but by the end of the year major cavalry operations stopped altogether on the eastern front. Wolfram did well in the cavalry and by fall, 1916 commanded the horse depot of the Twelfth Cavalry Brigade. This was no small feat for a lieutenant, but von Richthofen realized it would never bring him the kind of fame that his cousin Manfred was attaining in his red airplane. Although he soon became a squadron commander with 160 men working for him, the siren call of the air service was too much for Wolfram and in June 1917 his superiors approved a transfer to the *Luftstreitkräfte*.[274]

After two long months of vacation at home, Wolfram reported to the 14th Flying Replacement Regiment in September and began his three and one-half months of primary training. In December he transferred to the 11th Flying Replacement Battalion and completed advanced training in March 1918. Von Richthofen apparently performed well in both training regimens as he earned the privilege of flying the much-coveted single-seat fighters. Wolfram could now accept Manfred's invitation to join his elite Jagdgeschwader (JG) 1.[275] Wolfram quickly finished a two-week course at the fighter pilot school in Valenciennes and reported in to *Jagdstaffel* (Jasta, or fighter squadron) 11, on 4 April 1918.[276]

Manfred took an active role in not only the conduct of his command, but also in the early evolution of aircraft design and tactical aircraft. Manfred would put all new pilots through his own rigorous training program; if they failed to meet his standards he quickly transferred them. One exercise involved giving each pilot one hundred bullets to shoot at a drogue in order to ascertain their marksmanship. Although most new pilots might get at most fifty hits, the more experienced pilots would usually get eighty hits, with Manfred himself scoring ninety or more. Manfred kept a close watch on his new

---

[273] Corum, *Wolfram von Richthofen*, 53-56.
[274] Corum, *Wolfram von Richthofen*, 52-55.
[275] Norman Franks and Greg van Wyngarden, *Fokker Dr 1 Aces of World War I (*Oxford: Osprey, 2001), 30.
[276] Peter Kilduff, *Richthofen: Beyond the Legend of the Red Baron (*New York, NY: John Wiley and Sons, 1993), 196.

pilots in the air. One of his new lieutenants confirmed how von Richthofen "watched over me, the 'chick'" and how "every time we returned he called us together for criticism."[277]

Manfred was on the leading edge of air combat and maintained a close friendship with aircraft designer Tony Fokker. Through 1917, he personally lobbied Fokker and the *Luftstreitkräfte* High Command for aircraft that could beat the Sopwith Camel, SE 5, and Bristol two-seater. Impressed by the new Sopwith triplane fighter, Manfred pushed for a German version. In the fall of 1917 the highly-maneuverable Fokker Dr 1 entered service and went directly into Manfred's Jasta 11 of JG 1.[278] Along with several other front-line pilots, in January Manfred attended type-tests in Berlin. These tests determined which of twenty-eight aircraft from five firms would enter mass production. The Fokker VII, a highly maneuverable biplane, was the clear winner.[279] The Red Baron's astronomical career ended abruptly when a .303 pierced his heart on 21 April 1918.[280]

In a sad twist of fate, on Wolfram's first flight he accompanied Manfred on his last. Although he therefore had minimal overlap with his cousin in JG 1, he was well aware of his exploits, command technique, and love of aircraft. Wolfram quickly proved his worth in the air, downing two French Spads and two Sopwith Camels by August, when the Luftstreitskrafte took Jasta 11 out of combat due to attrition. In recognition of his aerial bravery, von Richthofen earned the Iron Cross First Class. Jasta 11's mission was exceptionally difficult, as JG 1 was supporting Second Army without air superiority. Providing cover for ground-attack aircraft and reconnaissance aircraft greatly increases in difficulty without command of the sky.[281]

Although it had rapid personnel turnover, Wolfram's unit performed valiantly and Jasta 11 reentered combat in September. In fact, at one point Wolfram took temporary command of Jasta 11 and led the squadron on several patrols.[282] On 6 September von

---

[277] Franks and van Wyngarden, *Fokker Dr 1 Aces of World War I,* 23-24.
[278] Hans Redemann, *Innovations in Aircraft Construction (*West Chester, PA: Schiffer Military History, 1991), 16-19.
[279] Kilduff, *Richthofen,* 172.
[280] Norman Franks, Hal Giblin, and Nigel McCrery, *Under the Guns of the Red Baron (*New York, NY: Barnes and Noble, 1999), 204-208.
[281] Herbert Mason, *The Rise of the Luftwaffe: Forging the Secret German Air Weapon, 1914-1940* (New York, NY: The Dial Press, 1973), 200.
[282] Terry Treadwell and Alan Wood, *The First Air War: A Pictorial History* (New York, NY: Barnes and Noble, 1996), 143-145.

Richthofen shot down a Sopwith Dolphin, one of the RAF's newest fighters, and two days later he knocked two RAF SE 5as out of the sky on a single sortie. Wolfram achieved his final kill of the war when he shot down an American DH 4 over Montmedy on 5 November.[283]

Wolfram von Richthofen proved himself an exceptional fighter ace in his own right and by November 1918 had eight confirmed aerial victories.[284] This is a considerable feat given that Wolfram first flew in combat that April; he probably would have added to his score if the war lasted longer. Wolfram emerged from the Great War with a solid record and valuable experience. He served as a cavalry officer in ground battles for over two years, which gave him a unique appreciation for the ground perspective in war. After transitioning to the *Luftstreitkräfte*, by all accounts he excelled as an aviator and saw the potential of airpower. Wolfram shared Manfred's affinity for the technological development of aircraft; he would spend many of the interwar years guiding the development of fighter and bomber aircraft in preparation for World War II. He would combine his exceptional appreciation for the air and ground perspective to become perhaps the greatest general in the *Luftwaffe*.

Building the *Luftwaffe*

Although Germany would soon chafe under the June 1919 Versailles Treaty, Wolfram von Richthofen found the transition to civilian life a welcome respite. Since the treaty abolished Germany's *Luftstreitkräfte*, but did not prohibit civilian aviation, von Richthofen found alternate means to pursue his love of flying machines. A young twenty-three-year old noble and air ace, Wolfram would find many opportunities to excel in the civilian sector. As he came from a family of considerable social and financial capital, von Richthofen could either go straight into business or attend engineering school and could qualify for the top ranks in industry. His decision to attend engineering school would both make him successful as a tactical air commander and strengthen Germany's conduct of maneuver warfare from the third dimension.

---

[283] Corum, *Wolfram von Richthofen*, 70-76.
[284] William Burrows, *Richthofen: A True History of the Red Baron* (New York, NY: Harcourt, Brace and World, 1969), 223.

Although von Richthofen had considerable family connections, he still had to take the Abitur, a final high-school examination that he skipped when entering the cadet academy. Wolfram attended short courses in nearby Breslau in preparation for the Abitur. It was not all work, however; young von Richthofen longed for female companionship and delved into the social life that he could not afford during the Great War. It was in Breslau that Wolfram met the tall and dark-haired Jutta von Selchow, who came from the landed nobility of Upper Silesia. If Wolfram were still in the regular army, marriage would have been highly discouraged prior to age thirty. As it were, Wolfram and Jutta were married in the Lutheran Church in Breslau on 18 September 1920.[285]

While courting Jutta, von Richthofen passed his Abitur and earned a place in mechanical engineering at the Technical University of Hanover in 1920. After a short honeymoon, the new couple moved to Hanover and Wolfram began his studies in earnest. Three years later, von Richthofen was completing his thesis, a novel design of a farm harvesting machine, and was preparing for a career in civilian aviation.[286] Germany's Reichswehr commander in chief, Colonel General Hans von Seeckt, once was in town inspecting units of the Reichswehr and von Richthofen sought an audience with him to sound out the possibility of his returning to the air arm of the German military. Von Seeckt's adjutant, Major Gotz von Olenhusen, was Wolfram's uncle. Even better, Wolfram's other uncle Manfred, now a retired general, served as a corps commander with von Seeckt and gladly set up a meeting between the two. Von Richthofen was bright and deserving in his own right, although clearly willing to use family connections in order to gain a favorable audience.[287]

As it turned out, von Richthofen was exactly the type of officer von Seeckt was looking for: a noble with technical knowledge. In 1923 Von Seeckt arranged for Wolfram to return to the army as a general staff officer, an elite position that would ensure preference in promotion and command opportunities. Although Wolfram was officially an officer in the 2nd Calvary Division in Breslau, he would never visit the unit. This assignment was a cover for his real work at the *Reichswehr* Berlin headquarters.

[285] Corum, *Wolfram von Richthofen,* 82.
[286] Gordon and Witts, *Guernica,* 27-29.
[287] Corum, *Wolfram von Richthofen,* 83.

From 1923 to 1929, von Richthofen worked closely with the Technical University of Berlin on several projects, many classified.[288]

Von Richthofen was exceedingly busy during these years and by 1929 he both fathered his third child and completed his doctoral dissertation. Wolfram was interested in streamlining the serial production of aircraft and centered his doctoral research on fabrication and assembly. He studied the production of large aircraft by both the Junkers Aircraft Company in Dessau and the Dornier Company in Switzerland and developed a method for rating the industrial efficiency of a company's ability to mass produce aircraft. Von Richthofen earned his doctoral degree in 1929 and titled his top-secret dissertation, "The Influence of Aircraft Production Methods and Contrasting Model Types with References to Production of Military Aircraft."[289] His dissertation correctly predicted the importance of mass production under wartime conditions. Although during the war many manufacturers, most notably the Italians, could create beautiful aircraft, they were almost useless if they could not be mass produced.[290]

In 1929 the Reichswehr sent von Richthofen, now a captain, to Italy as an official representative. Germany was eager to establish contact with any nation possessing a modern air force, and Italy's aircraft had set several major records. Major Hellmuth Felmy, chief of the Reichswehr office, instructed von Richthofen to study the airpower concept of the Italians, most notably those of famous theorist General Giulio Douhet. Languages were never one of von Richthofen's strengths, but with great effort and not a little bit of pride he achieved a substantial degree of fluency in Italian. His hard-earned ability to converse in their language earned him the respect and friendship of many Italian air officers, most notably General Italo Balbo, commander of the Italian air force. Connections such as this granted von Richthofen virtually unhindered access. Unfortunately, after von Richthofen's return from Italy in 1932, doctors diagnosed him with an incipient case of tuberculosis. Although he attended a sanitarium for several

[288] Gordon and Witts, *Guernica,* 29-30.
[289] Corum, *Wolfram von Richthofen,* 93.
[290] Robin Higham and Stephen Harris, *Why Air Forces Fail: The Anatomy of Defeat (*Lexington, KY: The University Press of Kentucky, 2006), 170.

weeks, von Richthofen would now face bouts of tuberculosis-induced exhaustion for rest of his life.[291]

For the next three years, von Richthofen commanded a company of motorized troops, an assignment that was part of the normal progression for military staff officers. This was a critical period in Germany's development of mechanized warfare. Von Richthofen participated in several mechanized exercises in eastern Germany involving motorized infantry battalions, armored cars, and motorcycle battalions. He observed that robust radio communication was crucial to the proper sequencing of maneuvers. The Reichswehr recognized the operational potential of these maneuvers and placed increasing emphasis on honing them.[292]

On 30 January 1933, Adolf Hitler became chancellor.[293] The vast majority of both Germany's military and nobility favored Hitler and his vision, at least initially. The Weimar Republic was never popular among either group; von Richthofen was no exception and personally felt Hitler would restore order to Germany.[294] Today it is difficult to fathom how anyone of otherwise exceptional intelligence and background could have venerated what would later turn out to be the most reviled human in history; but such was Hitler's charisma and many fell under his spell. Von Richthofen went further and would never disavow Hitler, even well after it was clear that he had doomed the Reich to utter defeat.

Four days after taking control of Germany, Hitler appointed Hermann Göring as head of the Reich Commission for Aviation, a thinly veiled cover for the incipient *Luftwaffe*.[295] It is difficult to gauge Hitler's true understanding of aviation's potential accurately. After World War II, Göring, Erhard Milch, and General Hans von Seidel all asserted that he was disinterested and ill-informed. Others such as Colonel Nicolaus von Below, Lieutenant General Theo Osterkamp, Colonel Werner Baumbach, and aircraft designers Ernst Heinkel and Willy Messerschmitt, attested to Hitler's interest and confidence in aviation as well as his well-known fascination with technology. Von

---

[291] Corum, *Wolfram von Richthofen*, 97.
[292] Robert Citino, *The Evolution of Blitzkrieg Tactics: Germany Defends Itself Against Poland, 1918-1933* (Westport, CT: Greenwood, 1987), 184-192.
[293] Edward L. Homze, *Arming the Luftwaffe: The Reich Air Ministry and the German Aircraft Industry 1919-1939* (Lincoln, NE: University Press of Nebraska, 1976), 49.
[294] Corum, *Wolfram von Richthofen*, 99.
[295] Homze, *Arming the Luftwaffe*, 49.

Richthofen thought he would regain for Germany, "her rightful place at Europe's table after the shameful *diktat* of Versailles."[296] In any case, Hitler clearly understood the propaganda potential of airpower; this is clear when viewing the opening sequence of Leni Riefenstahl's film of the Nürnberg party rally in 1934. In *Triumph of the Will*, as if sent by the Gods themselves, Hitler's plane gracefully flies out of the clouds to arrive at a medieval town.[297]

Von Richthofen's early career progressed slowly, but steadily, and he earned the rank of major in 1934. As the new branch chief of the Aircraft Development Office, he immediately set to work rebuilding the German air arm. Wilhelm Wimmer was head of the *Luftwaffe* Technical Office and Walter Wever was at the helm of the *Luftwaffe*; both of these brilliant and capable men helped insulate von Richthofen from Göring's bumbling approach to vital issues of doctrine and equipment.[298] In any case, von Richthofen quickly demonstrated the courage to follow his convictions.

Although von Richthofen had an appreciation for superb aircraft design, he recognized that sometimes it was better to have a less than perfect design in operation rather than a perfect design still on the drawing board. Wimmer's office had worked with the German aviation industry through the early 1930s and thus far only had mediocre aircraft to show for it. First generation *Luftwaffe* aircraft included the Heinkel He 51 fighter, Arado Ar 65 fighter, the Heinkel He 45 light bomber and Dornier Do 11 bomber; none of these aircraft was destined for greatness and highlighted an industry in transition from cloth to metal, fixed to retractable landing gears, and underpowered small engines to powerful thousand-horsepower models.[299]

Rather than wait for the transition to be complete, in 1934 von Richthofen issued a statement of "development guidelines," which strongly argued for placing mediocre bombers such as the Do 11 into full production. Von Richthofen correctly insisted, "A conditional, useful, operative piece of equipment is better than no equipment at all. The finest and most complete piece of equipment whose development is not finished is next to worthless. An air force must be ready for operations at all times. Only the equipment on

[296] Gordon and Witts, *Guernica*, 29.
[297] Homze, *Arming the Luftwaffe*, 51.
[298] Corum, *Wolfram von Richthofen*, 101.
[299] Corum, *Wolfram von Richthofen*, 102.

hand will be used in the few hours given to achieve the desired, vital objectives."[300] Promoting the production of aircraft that will be essentially obsolete as they come off the assembly line could be a risky career move. Von Richthofen, however, felt it more important to prepare the aircraft industry for the mass production that Germany would soon demand.

In 1933, the Technical Office began conducting several air exercises, some aimed at training the air staff and others to refine requirements for future fighters and bombers. Von Richthofen's branch was responsible for translating these requirements into industry specifications. The Bf 110 twin-engine fighter, Bf 109 fighter, Ju 87 Stuka, He 111 and Do 17 medium bombers all came from these flying tests.[301] Although von Richthofen exercised a significant influence over these specifications, he did not always get his way. For example, he greatly disapproved of the Stuka and maintained that with the development of anti-aircraft artillery, "every plane that descended to such a low altitude would be shot down by anti-aircraft fire. Diving below 6,600 feet is complete nonsense."[302] The Stuka entered production anyway and later proved crucial for the air-ground operations that von Richthofen would himself lead, although his assessment of its weakness was correct.

Having studied Douhet's *Command of the Air,* von Richthofen understood the need for long-range strategic bombers and along with Wimmer pushed for their development. Von Richthofen "was an ardent champion of the superspeed bomber," the Ju 88, and in 1934, he laid out the design requirements: a speed of 300 miles per hour, a range of 1,500 miles, and a bomb load of 1,102.5 pounds.[303] Since it would be a superior weapon, it would need only one machine gun "for moral support."[304]

The *Luftwaffe* also built two prototypes, the Junkers Ju 89 and the Dornier Do 19. Göring, demonstrating his characteristic incompetence, disapproved of the prototype aircraft and further claimed the Technical Office "had overstepped its authority in

---

[300] Homze, *Arming the Luftwaffe*, 86-87.
[301] Joachim Dressel and Manfred Griehl, *Bombers of the Luftwaffe,* (London: Arms and Armour, 1994), 25-40.
[302] Paul Deichman, *Spearhead for Blitzkrieg: Luftwaffe Operations in Support of the Army, 1939-1945* (New York, NY: Ivy Books, 1996), 42.
[303] Richard Suchenwirth, *The Development of the German Air Force, 1919-1939*, USAF Historical Study 160 (Maxwell AFB, AL: USAF Historical Division, Air University, 1968), 155.
[304] Suchenwirth, *The Development of the German Air Force,* 155.

commissioning models of a heavy bomber."[305] Others such as war minister General von Blomberg had an entirely different reaction; he asked when it would be ready. Both of these four-engine bombers had underpowered 600 to 700 horsepower engines with the intent that 1000 horsepower engines would be ready in time for production models. Unfortunately, this meant that the prototypes could not meet the guidelines in range, speed, and defensive capability; they were doomed from the start.

The Technical Office tried to keep the program alive long enough to be tested with more powerful engines, but Wever's untimely death on 3 June instigated leadership changes within the *Luftwaffe*. Albert Kesselring replaced Wever. Ernst Udet, a World War I ace who lacked any technical capability, replaced Wimmer. These new officers, "in consultation with Milch and others, decided that further development of the first generation of heavy bombers was unwarranted."[306]

The He 177 was the only long range bomber made in significant numbers, but it still fell far short of the long range Allied aircraft. Although technically four-engine, the He 177 had tandem engines driving two propellers. This complicated engine arrangement caught on fire with alarming regularity, earning nicknames such as the "Flaming Coffin," "Cigarette Lighter," "Volcano," and "One Way Bomber" from its hapless crews.[307] Regardless, the "four-engine bomber was definitively dropped in the spring of 1937."[308] From the beginning, various "political aspects" caused the "the constant alternation of high and low development priority" of four-engine bombers, and "this failure in the armament sector…was one of the deciding factors in the outcome of the war."[309] Von Richthofen, a professional engineer and officer who understood the value of the long range bomber, found this vacillation understandably frustrating. Although the opportunity cost would have been high, with a proper strategy some of these long range bombers could have tipped the war in Germany's favor.

Despite these setbacks, by 1936 the Technical Office had helped the *Luftwaffe* evolve into a modern air force with the aircraft it would send to war in 1939. Second

[305] Homze, *Arming the Luftwaffe*, 122.
[306] Homze, *Arming the Luftwaffe*, 123.
[307] Sidney Hirsch et al., *Heinkel 177* (Fallbrook, CA: Aero Publishers, 1967), 8.
[308] Richard Suchenwirth, *Historical Turning Points in the German Air Force War Effort*, USAF Historical Study 189 (Maxwell AFB, AL: USAF Historical Division, Air University, 1959), 41.
[309] Suchenwirth, *Historical Turning Points in the German Air Force War Effort*, 41-43.

generation aircraft such as the Bf 109, Bf 110, Do 17, He 111 and Ju 87 represented the cutting edge of aviation technology and would prove their worth throughout World War II even as they were superseded by newer Allied aircraft. Von Richthofen, newly promoted to Lieutenant Colonel in April 1936, ensured the Technical Office did not sit on its laurels and immediately set to work designing the *Luftwaffe*'s third generation aircraft. One such aircraft was the Ju 88 "wonder bomber," which had a range of 2,500 km, cruise speed of 310 mph, and 1,100 lb bomb-load; greater than most other second-generation bombers.[310] German industry struggled to keep up and grew ten-fold in a three year period, from 30 thousand square meters of floor space capacity in May 1933 to 450 thousand square meters in May 1936. By May 1938 the aircraft industry would boast over 1 million square meters of floor space.[311]

As important as these second and third generation aircraft would prove throughout World War II, as early as 1935 von Richthofen's rare combination of technical education and military background enabled him to see far beyond propeller aircraft into the future of airpower. As an air ace with an engineering Ph.D., von Richthofen was in an elite cadre. Having followed high-performance aircraft development for several years, von Richthofen along with leading-edge aircraft designers realized they were rapidly approaching the limits of propeller performance.

The rocket motor promised the ability to break through these limitations. Although the German army started developing rockets in the 1920s the Air Ministry as well as its predecessor, Section 8 of ordnance testing, had dismissed the potential of mating a rocket motor to high-speed aircraft.[312] Von Richthofen quickly became "the key figure in forging the interservice rocket alliance" that would breathe new life into the reaction thrust program.[313] Since the turbojet was completely unknown outside a few small groups in Britain and Germany in 1935, "and because pulsejets and ramjets seemed as yet far from practical, the rocket was the only reaction-propulsion technology

[310] Homze, *Arming the Luftwaffe*, 163.
[311] Homze, *Arming the Luftwaffe*, 107.
[312] Michael Neufeld, *The Rocket and the Reich (*New York, NY: Free Press, 1995), 43.
[313] Neufeld, *The Rocket and the Reich*, 43.

available."[314] Von Richthofen seized upon the potential of rockets in aviation and first met with Werner von Braun at the rocket facility in Kummersdorf in early 1935.

Throughout the next few months he continued to meet with leaders in the field. On 10 May von Richthofen met Captain Leo Zanssen, then working with von Braun in Army Ordnance, and discussed the possibility of a *Luftwaffe*-Army-Junkers experimental rocket plane program. Zanssen was initially skeptical and pointed out the air ministry's earlier indifference to the rocket. Von Richthofen was of another opinion, however, and outlined how, "in the future, bombers could attack at high speeds and altitudes of 10,000 meters. They would be above the ceiling of anti-aircraft fire, and it would be difficult for slow-climbing, propeller-driven fighters to intercept them."[315] Von Richthofen's energetic support for the rocket program led eventually to the world's only operational rocket plane, the Messerschmitt Me 163 Comet.[316]

Propulsion technology was beginning to evolve rapidly and von Richthofen was in the thick of it. A delegation of army scientists in May met with Paul Schmidt, who was developing the pulse jet motor that would later power the V-1 "buzz bomb" in 1944.[317] Heinkel built Germany's first jet engine in the mid-1930s and in 1939 the Heinkel 178 became the first jet aircraft to fly.[318] These were heady times for those interested in aircraft development; the sky was the limit.

When Wever died and Udet replaced him, Von Richthofen along with the rest of the *Luftwaffe* suffered under his incompetence. Udet's response to a radar developer regarding the potential for the new technology to see aircraft beyond the horizon is a telling example: "If you introduce that thing you'll take all the fun out of flying!"[319] Since Udet understood dive-bombing, he concluded that it was the only way to put bombs on target. Udet mandated that all bombers be capable of dive-bombing, including two- and four-engine bombers.[320] Design teams shelved many promising and advanced models such as the Ju-88 and began frantically modifying existing designs to withstand

[314] Neufeld, *The Rocket and the Reich,* 45.
[315] Neufeld, *The Rocket and the Reich,* 45.
[316] Neufeld, *The Rocket and the Reich,* 45.
[317] Neufeld, *The Rocket and the Reich,* 44.
[318] Redemann, *Innovations in Aircraft Construction*, 106-109.
[319] Donald Caldwell and Richard Muller, *The Luftwaffe Over Germany: Defense of the Reich (*St. Paul, MN: MBI Publishing, 2007), 26.
[320] Suchenwirth, *Historical Turning Points in the German Air Force War Effort,* 30.

the added stress of dive-bombing. Udet also lacked the mental fortitude to cancel a failed design. For example, he kept the Me 210 in production well past the point where it had proved a "colossal failure," with "poor handling characteristics, instability, and tendency to spin."[321] Unfortunately, this was not an isolated incident.

Not even von Richthofen's interservice agreement regarding rocket development remained untouched. Udet insisted that the *Luftwaffe* have its own rocket development center and hired Eugene Sanger to head the "Aircraft Testing Center." Sanger's program "essentially duplicated the existing Army-*Luftwaffe* program" and top experts considered it a waste of effort and resources.[322] Due to Udet's lack of vision, "The joint character of Peenemunde had collapsed in less than a year."[323] Udet would eventually commit suicide in 1941, but this lay in the future. Without Wimmer's and Wever's expertise and top cover, it was time for von Richthofen to leave the Technical Office. In the fall of 1936 Spain gave him this opportunity.

As Von Richthofen left the Technical Office in 1936, he could look back on his interwar years with a certain amount of well-deserved pride. On a personal note, he had married and fathered three children. He spent time with his family and took vacations whenever he could. Although he was a typically strict German father, he relaxed when at home. Professionally, von Richthofen's career would already be the envy of most any military officer. He was a World War I ace, earned an engineering Ph.D., and helped shape what was at the time the world's most advanced air force. Von Richthofen had a tireless, inquisitive mind, and was willing to accept both personal and professional risk when he saw the proper course of action.

The Spanish Civil War

On 18 July 1936, Nationalist forces tried to seize control of Spain's faltering government in an attempt to return to an authoritarian Spain. Although the initial effort went well, rebel forces failed to seize power in Madrid and Barcelona, thus beginning a protracted war. As the Nationalists regrouped, General Francisco Franco turned to

[321] Homze, *Arming the Luftwaffe,* 163.
[322] Corum, *Wolfram von Richthofen,* 114.
[323] Neufeld, *The Rocket and the Reich,* 63.

Germany and Italy for help.[324] Hitler saw an opportunity to expand his influence throughout Europe and decided to assist his Fascist ally. Göring sent Lieutenant General Helmuth Wilberg as Chief of the Spanish operation. Wilberg had known von Richthofen since the 1920s and considered him a capable officer and more than qualified to run the special air squadron he was setting up.[325]

Von Richthofen gladly accepted Wilberg's offer and left the Technical Office in November 1936 to command the new Test Squadron. Along with Major General Hugo Sperrle and an advance party of the Condor Legion, von Richthofen saw a golden opportunity to test the *Luftwaffe*'s new doctrine, equipment, and aircraft.[326] Typical of his nature, von Richthofen was never satisfied with his achievements and eagerly searched for ways to push the envelope. Alas, Sperrle also knew von Richthofen since the 1920s and saw in him a highly competent staff officer. Although von Richthofen would have enjoyed the hands-on nature of command Sperrle promptly appointed him Condor Legion chief of staff. Von Richthofen and Sperrle made a good team in Spain.[327]

Von Richthofen and Sperrle understood from the beginning that Germany's involvement in Spain would be limited. Accordingly, they set policies that would successfully guide German involvement for the next three years. Von Richthofen knew they had to exercise restraint because if the Spanish population were to accept the Nationalist movement, they would have to "win this war for themselves."[328] Although their military involvement was limited, the Germans would learn valuable early lessons about the application of airpower.

They would also test elements of their operational air war doctrine. General Wever was not only a capable and inspirational leader, but he was also one of Germany's leading airpower theorists. His *Luftwaffe* Regulation 16, *The Conduct of the Aerial War*, was a tremendous contribution to German airpower doctrine.[329] Wever did not intend

---

[324] Raymond Proctor, *Hitler's Luftwaffe in the Spanish Civil War* (Westport, CT: Greenwood Press, 1983), 16-20.
[325] Corum, *Wolfram von Richthofen*, 119.
[326] Proctor, *Hitler's Luftwaffe in the Spanish Civil War*, 257.
[327] Allan Millett and Williamson Murray, *Military Effectiveness, Volume II: The Interwar Period* (Boston, MA: Allen and Unwin, 1988), 247.
[328] Corum, *Wolfram von Richthofen*, 120.
[329] James Corum, *The Luftwaffe: Creating the Operational Air War, 1918-1940 (*Lawrence, KS: University Press of Kansas, 1997), 180.

Regulation 16 to "proclaim unalterable dogma;" he felt it was the task of the *Luftwaffe* to update the manual as necessary based on subsequent developments in weapons and equipment and from experience gained during the Spanish Civil War.[330]

Regulation 16 also maintained that the best defense was a good offense. First and foremost, German forces should "attack the enemy to disable his air force, on the ground if possible, and then to attack and destroy his ground and sea forces once aerial supremacy was established."[331] Only once German air forces gained command of the air could they achieve other objectives, most notably the destruction of the enemy's war-making potential.

Regulation 16 focused more on operational and tactical vice strategic objectives as it devoted nineteen paragraphs to operations against enemy rail and highway facilities versus five paragraphs on strategic bombing.[332] There was an overall lack of conviction "concerning the vital importance of strategic operations, especially since there was no mention of the necessity of integrating them into a positive contribution toward the ultimate objective of defeating the enemy."[333] Toward this end, the *Luftwaffe's* experience in the Spanish Civil War did not help, as there was little infrastructure and war economy worthy of a complicated strategic air plan. In any case, Germany in general would often fail to see the proverbial "strategic" forest for the "operational/tactical" trees; Wever's manual was no exception.

Although elements of Regulation 16 such as gaining command of the air were largely Douhetan, it broke with his theory on the subject of terror bombing. The manual reflected high ethical standards and specifically rejected the concept of "terror raids upon cities." It did, however, reserve the *Luftwaffe's* right to carry out "retaliatory raids" when justified, stipulating, "The attack in question must be handled in such a way that its retaliatory character is clear."[334] Von Richthofen's experience in Spain would lead him to reject Douhetan strikes against enemy morale, although he would later experiment with terror bombing in Poland.[335] In sum, the 1936 version of Regulation 16 that von

[330] Suchenwirth, *The Development of the German Air Force*, 171.
[331] Homze, *Arming the Luftwaffe*, 132.
[332] Homze, *Arming the Luftwaffe*, 132.
[333] Suchenwirth, *The Development of the German Air Force*, 169.
[334] Suchenwirth, *The Development of the German Air Force*, 170.
[335] Thomas and Witts, *Guernica*, 42.

Richthofen took to Spain, "crystallized the *Luftwaffe*'s principles;" it was written well enough that the 1940 version had few changes.[336]

By November it appeared the Nationalists were close to taking Madrid and ending the war. With full Nationalist approval, the German force conducted several bombing attacks on Madrid in an attempt to break the population's morale. Although the Germans avoided mass casualties by designating a safe zone, when the dust cleared there were 244 civilians dead and 875 wounded.[337] The city did not surrender and the bombing actually seemed to strengthen civilian morale. However, the Germans did not stop morale bombing in recognition of its futility, but rather because increased Soviet involvement dictated a shift in their effort. In any case von Richthofen had one data point on morale bombing; it would not be the last.[338]

There was an important political aspect to the assignment that neither von Richthofen nor Sperrle had previously considered, yet they quickly adapted. The Germans worked through the Spanish and this took a certain flair for diplomatic skills that were not typical of the average German officer. Here von Richthofen's command of Italian paid dividends as he could converse in a hybrid Italian-Spanish that seemed to work rather well. Another difference between the two nations' officer corps was the promotion system. Germans would earn rank largely through merit while the Spanish generally gained promotions through social or political means. Von Richthofen was a good judge of character, however, and he soon determined which officers were effective and which to bypass. He considered General Kindelan, chief of the Nationalist air force, to be an "old, used-up fellow" who "lies and has no understanding." Others such as Major Sierra of Kindelan's staff were highly effective and earned comments such as "I'd trust him with my operational plans."[339] Overall, von Richthofen summed up the Nationalists as, "good troops and miserable generals who are fit to be battalion commanders at best."[340]

---

[336] Homze, *Arming the Luftwaffe,* 132.
[337] Proctor, *Hitler's Luftwaffe,* 66-67.
[338] Corum, *Wolfram von Richthofen,* 121.
[339] Corum, *Wolfram von Richthofen,* 123.
[340] Karl Ries and Hans Ring, *The Legion Condor: a History of the Luftwaffe in the Spanish Civil War, 193-1939 (*West Chester, PA: Schiffer Military History, 1992), 138.

According to von Richthofen, the collective Italian effort was abysmal and he "soon came to the conclusion that his former friends and associates were blithering incompetents."[341] Although the Italians committed significant resources they were slow to learn operational lessons and entered the war without a comprehensive air doctrine.[342] Sperrle often complained of the lack of Italian coordination with the Germans and Spanish prior to their attacks.[343] Even Franco was uncomfortable with "the entry of large numbers of Italian troops and resented the independence of Italian command."[344]

Unlike the Italians, von Richthofen knew that close coordination between the Nationalists and Germans was the linchpin of operational success. A prime example of this is the attack on Guernica on 26 April 1937. Within the town was a bridge and road intersection that marked the only escape route for Basque forces to the east of Guernica. Although most agree the bombing of Guernica was a terror attack, there was at least a hint of legitimacy: in addition to the lines of communication, at least two Basque army battalions were stationed within the city. In any case, von Richthofen carefully planned the attack himself and coordinated with Colonel Vigon, a trusted associate and Franco's highly competent chief of staff. The two officers agreed that cutting off the retreat route through Guernica would trap Basque forces. [345] Von Richthofen noted in his diary that "Guernica has to be destroyed if we are to strike a blow against enemy personnel and material."[346]

During a single bombing run on Guernica, three Italian bombers dropped 2 tons of bombs and 21 German medium bombers dropped 30 tons. Although they did not collapse the bridge they pulverized the intersection and most of the town was on fire due to the wooden construction and lack of fire-fighting equipment.[347] Von Richthofen was pleased with the attacks, although true to his demanding nature he complained about the Nationalist Army's sluggish movement and inability to capitalize on the resulting shock

---

[341] Corum, *Wolfram von Richthofen,* 127.
[342] Brian Sullivan, "The Italian Armed Forces, 1918-40," in *Military Effectiveness,* vol. 2, Allan Millett and Williamson Murray, eds. (Boston, MA: Unwin Hyman, 1988), 169-217.
[343] Proctor, *Hitler's Luftwaffe,* 136.
[344] Stanley Payne, *The Franco Regime, 1936-1975 (*Madison, WI: University of Wisconsin Press, 1987), 131.
[345] Thomas and Witts, *Guernica*, 117-139
[346] Corum, *Wolfram von Richthofen,* 390.
[347] Payne, *The Franco Regime,* 140-141.

and disruption. The Basques had a full day to push the wreckage aside and the majority escaped. Maintaining an air perspective, Von Richthofen would often voice his disappointment in the ground forces' ability to exploit a situation. He would make the same complaint again in Poland, France, and the Soviet Union.[348]

Von Richthofen also demonstrated an uncanny ability to match existing equipment to operational problems and develop innovative solutions with lasting impact. For example, von Richthofen determined that in order to bolster the Nationalists' firepower, he could direct his heavy 88 mm and 20 mm light flak guns at ground targets. The 88 mm gun with its high velocity and flat trajectory proved especially lethal in direct fire against everything from bunkers to tanks. Although some *Luftwaffe* purists recoiled at the thought of using an air defense weapon in a ground role, it worked rather well and von Richthofen showed little sympathy for this narrow view. On 1 May he noted in his diary, "The flak, to the horror of experts in Berlin, has consistently been used as the backbone of the ground artillery. We pulled the joke of sending a battery north of Guernica as coastal defense. If that battery would manage to sink a Red ship, the comedy of errors would really receive its crowning glory."[349] Von Richthofen's innovations gradually became a part of *Luftwaffe* doctrine.

Working with the Spanish Nationalist staff, von Richthofen also found innovative solutions to the air-ground communication problem. Close air support was in its infancy during the Spanish Civil War and *Luftwaffe* aircraft were having a difficult time differentiating friendly from enemy troops.[350] Pilots took off with maps of the ground situation, but by the time they arrived over the target area the ground situation had usually changed. This made target recognition exceedingly difficult and increased the potential for fratricide. Von Richthofen and the Spanish staff developed a two-fold solution. They first improvised a simple, low-tech ground signals system that troops could use to highlight their position to aircraft. Second, they set up command posts equipped with telephones, on hilltops if available, along the front lines. From these command posts, German commanders could call the aircraft's home base and relay messages. The base would then use its radios to contact the pilots directly; this enabled

[348] Proctor, *Hitler's Luftwaffe*, 121-125.
[349] Proctor, *Hitler's Luftwaffe*, 134.
[350] Proctor, *Hitler's Luftwaffe*, 96-97.

ground forces to coordinate with air support aircraft in near real-time.[351] This system was still awkward as ground forces could not yet communicate directly with aircraft due to a lack of portable radio equipment. Still, this highlights von Richthofen's ability to innovate on the fly and the system became standard practice in the Condor Legion.[352]

Not only was Von Richthofen technically savvy, but he understood the political aspects of Germany's involvement with Spain and the need to maintain the legitimacy of the Nationalist government. Unfortunately, Von Richthofen did not get along with his new commander, Major General Helmuth Volkmann; in January 1938 he requested and received a transfer back to Germany. Volkmann, who replaced Sperrle in November 1937, had an over-controlling command style and a poor grasp of the key factors surrounding Germany's involvement. Instead of limiting German involvement in the conflict, Volkmann made increasing requests for troops, personnel, and equipment as he determined, "the officer corps in the ranks from lieutenant through captain have been decimated by losses and partly watered down by the quality of replacements."[353] Relations between Volkmann and the Nationalists soured and Berlin became frustrated with his poor appraisals of the ground situation along with his endless requests. By the fall Volkmann was relieved of command and in October 1938 von Richthofen returned to Spain, this time as a major general and commander of the Condor Legion. The Nationalist high command was pleased with von Richthofen as he held a more balanced view of Germany's involvement.[354]

Now in command, von Richthofen demonstrated his grasp of the political situation. The Nationalists had conducted their final major offensive in the summer of 1938 and by early 1939 the end of the war was in sight. Instead of attempting to seize glory for himself and Germany by ordering his forces into Barcelona, the last major Republican holdout, von Richthofen instead solicited the German Foreign Ministry for permission to send most of his ground forces home. The Foreign Ministry declined his request, maintaining it "would send the wrong signal."[355]

---

[351] Williamson Murray, *Strategy for Defeat: The Luftwaffe 1933-1945 (*Maxwell Air Force Base, AL: Air University Press, 1983), 15.
[352] Corum, *Wolfram von Richthofen*, 132.
[353] Proctor, *Hitler's Luftwaffe*, 211-212, 237,
[354] Proctor, *Hitler's Luftwaffe*, 239.
[355] Corum, *Wolfram von Richthofen*, 145.

Von Richthofen was undeterred, however, and as Nationalist forces stormed Barcelona he ordered all troops to remain out of sight well beyond the city limits. This act ensured the Nationalists received full credit for the victory, which helped reinforce Nationalist legitimacy.[356] In stark contrast to German restraint, the Italians showed their selfish lack of vision by demanding that their troops enter the city with the first Nationalist battalions.[357] Although Von Richthofen was personally ambitious he exercised restraint when the situation warranted.

In any case, there was no need to seek out accolades; Franco himself adorned von Richthofen with several medals. Von Richthofen reciprocated and presented the *generalissimo* with "a donation of one million *pesetas* collected by the men of the Condor Legion for the families of Spanish airmen who had fallen."[358] In May 1939 von Richthofen returned to Germany a national hero and a firm supporter of Hitler; he agreed to speak at several Nazi Party rallies. Von Richthofen had impressed the *Luftwaffe* and Wehrmacht high command with his demonstrated ability to employ airpower in support of Nationalist forces. He would have many opportunities to hone this skills during the next six years.[359]

Training exercises have their limits and the Spanish Civil War gave von Richthofen an opportunity to spread the newly-anointed wings of the *Luftwaffe*. In general, Germany's experience in Spain gave it an advantage that would take the Allies several years to overcome. Combat is an excellent teacher and von Richthofen was an eager student. He gained immense experience during his time with the Condor Legion and it would pay huge dividends during the early years of World War II. He had the opportunity to develop new doctrine and tactics and proved himself an able leader in his first commands. Although the Germans apparently lacked a coherent strategy, as a minimum von Richthofen demonstrated the capacity to fit his immediate objectives into operational level goals. Finally, he was a surprisingly talented diplomat; military officers able to understand political situations are rare and a valuable resource.

---

[356] Proctor, *Hitler's Luftwaffe*, 246-248.
[357] Ries and Ring, *The Legion Condor*, 210.
[358] Proctor, *Hitler's Luftwaffe*, 248.
[359] Corum, *Wolfram von Richthofen*, 145-146.

Blitzkrieg in Poland, 1939

During the interwar years many in the *Luftwaffe* considered independent air action aimed at destroying targets deep inside enemy territory the key to victory. Air Regulation 16 encapsulated this mindset. "The mission of the *Luftwaffe* is to serve this purpose [the defeat of the enemy military forces as part of a process of breaking the will of the enemy] by conducting air operations as part of the overall pattern for the conduct of the war."[360] During the Condor Legion's experience in Spain, however, the fledging *Luftwaffe* was already shifting its focus more towards a direct support of the army.

This shift continued as the *Luftwaffe* initiated planning for campaign against Poland. As outlined in the Eighth (Military History) Division's "Survey of German Conduct of Air Warfare," the *Luftwaffe* had three major tasks in Poland.[361] First, the *Luftwaffe* would gain air superiority by destroying the Polish Air Force, its ground support facilities and aircraft industry. Second, it would support ground army operations in order to facilitate a decisive breakthrough. Finally, the *Luftwaffe* would attack Polish military installations and armament factories near Warsaw.[362] These priorities were largely in line with Regulation 16 and von Richthofen would do his best to support these tasks in their prescribed order.

On 1 August 1939 Hans Jeschonnek, the *Luftwaffe*'s new chief of staff, sent out additional guidance to all senior *Luftwaffe* commanders. His orders laid out several principles in accordance with *Luftwaffe* Regulation 16 yet also incorporated lessons from the Spanish experience. In anticipation of an overwhelming demand for air support, his first principle empowered air commanders with deciding when, where, and how to employ their air forces against ground targets. Jeschonnek also encouraged air commanders to think beyond their immediate objective and consider the larger picture. For example, although attacking forces close to ground forces is a necessary mission, air commanders can often make more of a difference by interdicting targets well beyond the front. This would prevent those enemy forces from ever reaching the front and having the opportunity to engage friendly forces. Finally, Jeschonnek recommended

---

[360] Kenneth Macksey, *Guderian: Creator of the Blitzkrieg (*New York, NY: Stein and Day, 1975), 85.
[361] Paul Deichmann, *Spearhead for Blitzkrieg: Luftwaffe Operations in Support of the Army 1939-1945 (*Mechanicsburg, PA: Stackpole Books, 1996), 141.
[362] Deichmann, *Spearhead for Blitzkrieg,* 141.

commanders not break up Stuka groups and employ them piecemeal, but rather to concentrate them against decisive points in order to achieve a greater operational effect. These recommendations made complete sense to von Richthofen.[363]

In May 1939 von Richthofen was still in Spain when Germany finalized its plans for the invasion. As the foremost expert in air-ground operations in Germany, and at the time arguably the world, von Richthofen's role in the campaign was secure. Selected to lead the "Special Purposes Air Division," von Richthofen would command 3 Stuka squadrons, one close air support squadron, a single Bf-110 squadron, and one reconnaissance flight. This amounted to 114 Stukas, 30 Bf 110s, 20 Hs 123s, and 9 Hs126s.[364] Von Richthofen assumed command in August, less than one month prior to the invasion.

As von Richthofen reviewed his role in the invasion of Poland, he immediately identified several problems. This special division would support the German Tenth Army's advance, which the Wehrmacht referred to as the *Schwerpunkt,* or point of main effort.[365] Von Richthofen felt that the army's *Schwerpunkt,* the massive initial armor thrust that would last several days, lacked detail. Based on his experience in Spain, he identified several minor weaknesses and an overall "thinness" to the communications network.[366] To mitigate his concerns, von Richthofen wisely filled his staff with several capable veterans he had worked with in Spain. Although it was too late to make major changes, he identified the communications network as the weakest link and set his most competent technical officer, Major Siebert, to work adapting the system.

Von Richthofen also knew that good commanders did not lead from the desk. For the entire week prior to the invasion, von Richthofen flew his Fieseler Stork, a single-engine observation plane resembling a Piper Cub, to all subordinate units and personally conferred with all of his commanders. On several occasions he flew to Tenth Army headquarters in order to solidify his grasp of the top ground commanders' intent and iron out necessary details. Von Richthofen realized that the success of his division depended on close coordination between air and ground commanders. In order to make sure they

---

[363] Corum, *Wolfram von Richthofen,* 160.
[364] Williamson Murray, "The Luftwaffe Experience, 1939-1941," in *Case Studies in the Development of Close Air Support,* Benjamin Franklin Coolidge, ed. (Washington, DC: Office of USAF History, 1990), 82.
[365] Murray, "The Luftwaffe Experience," 82.
[366] Corum, *Wolfram von Richthofen,* 160.

were on the same page, he often met with the commander of the Tenth Army, General Walter von Reichenau.[367] The direct method of command felt natural to von Richthofen, as he would fly his Stork over friendly and enemy territory alike throughout the entire war. In addition to conferring with subordinates and superiors he would also increase his battlefield awareness by seeing it with his own eyes. Finally, von Richthofen always took some time to relax and as an avid hunter he would often note potential hunting sites on his map for later reference. Reflecting his confidence as commander, these sites were often in enemy territory.[368]

Communications between air and ground forces, on the other hand, initially were complicated and redundant. In 1939 the *Luftwaffe* depended on two separate systems for ensuring close coordination between air and ground commanders. First was the *Koluft* (Kommandeur der *Luftwaffe*), a liaison element of *Luftwaffe* general staff officers under command of the army. The *Koluft* was responsible for keeping army groups and army command headquarters informed of all relevant *Luftwaffe* operations. Although they operated a small number of their own reconnaissance aircraft, the *Koluft* had no authority over *Luftwaffe* aircraft.[369] The second system was the *Flivos* (Flieger Verbindungsoffiziere), "specially trained *Luftwaffe* officers attached to" ground units in forward positions.[370] The *Flivos*, usually junior officers, remained under *Luftwaffe* command and were responsible for keeping air commanders informed of the ground situation. This system worked well enough under a static situation, but in a dynamic fight with maneuvering forces the system simply could not keep up.[371] In sum, the two organizations in place at the beginning of the war had overlapping responsibilities yet neither was effective since they could not control aircraft. The *Koluft* and *Flivos* would give von Richthofen several headaches throughout the war.

---

[367] Williamson Murray and Allan Millet, *A War to be Won (*Cambridge, MA: Belknap Press of Harvard University Press, 2000), 47.
[368] Corum, *Wolfram von Richthofen*, 161.
[369] Andreas Nielsen, *The German Air Force General Staff*, USAF Historical Study 173 (Maxwell AFB, AL: USAF Historical Division, Air University, 1959), 97-98.
[370] Joel Hayward, *Stopped at Stalingrad: The Luftwaffe and Hitler's Defeat in the East 1942-1943* (Lawrence, KS: University Press of Kansas, 1998), 81.
[371] Hayward, *Stopped at Stalingrad*, 81.

The invasion began at 0445 on 1 September 1939. The *Luftwaffe* deployed 1,929 aircraft including 897 bombers.[372] Aside from fog causing initial delays the *Luftwaffe* performed exceptionally well and by the end of the second day had successfully established air superiority. Poland started with 400 aircraft and those remaining after the initial attack operated from emergency airfields far from the front. Polish air commanders could not employ their remaining air units in a coherent fashion. Now that it had air superiority the *Luftwaffe* moved to its second and third tasks.[373] Von Richthofen shifted his focus to supporting Tenth Army and attacking the Polish transportation system, including major rail junctions and bridges. These raids limited Polish ground movement and interdicted the mobilization and movement of their reserves.[374]

As Tenth Army thrust into the Polish ground forces, however, von Richthofen faced a significant problem: his logistical lines were already stretching to the breaking point. Before operations had begun, von Richthofen was well aware of the logistical limitations he would face. Early versions of the Stuka had an absolute maximum range of 620 miles, which gave it a best-case combat radius of less than 300 miles.[375] Von Richthofen scrambled to advance his mobile supporting columns in order to keep up with Tenth Army. To make matters worse, Polish forces stored few munitions along with petroleum, oil and lubricants (POL) at their airfields and both sides destroyed what was available within the first few days of the war. Fourth Air Fleet allocated one group of Ju 52 transports intended to supply both Tenth Army and the Special Purposes Air Division. Having no alternative, on 3 September von Richthofen ordered transport aircraft to begin carrying fuel forward.[376] The *Luftwaffe* was fortunate it had air superiority as it lost only twelve Ju 52s during the Polish campaign.[377] If the Polish had still been vying for command of the air the *Luftwaffe* would have lost many more. As it turned out, German

---

[372] Richard Suchenwirth, *Command and Leadership in the German Air Force,* USAF Historical Study 174 (Maxwell AFB, AL: USAF Historical Division, Air University, 1969), 240.
[373] Deichmann, *Spearhead for Blitzkrieg*, 142.
[374] Corum, *Wolfram von Richthofen*, 166.
[375] John Ward, *Hitler's Stuka Squadrons: The Ju 87 at War, 1936-1945 (*Staplehurst: Spellmount, 2004), 35.
[376] Corum, *Wolfram von Richthofen*, 168.
[377] Antony Kay and Paul Couper, *Junkers Aircraft and Engines, 1913-1945 (*Annapolis, MD: Naval Institute Press, 2004), 118.

forces faced little opposition as Polish air and ground forces largely crumbled before them.

As the name *Blitzkrieg* implies, the campaign proceeded quickly and Germany surrounded Warsaw three weeks into the invasion; the end was near. Tenth Army's rapid advance on the capital, "made possible in no small measure by the support of von Richthofen's Stukas and Henschels," far outstripped other German army forces.[378] On 22 September, Von Richthofen determined that his forces could deal a decisive blow by terror bombing the city. "Urgently request exploitation of last opportunity for large-scale experiment as devastation and terror raid…every effort will be made to eradicate Warsaw."[379] In any case, the bombing campaign against Warsaw that followed was largely unnecessary as the majority of remaining Polish forces, instead of making a last stand in the capital city, escaped south to Romania.

Von Richthofen's proposal of a terror bombing campaign is from Giulio Douhet's *Command of the Air*. Douhet suggests that after gaining air superiority an air force "should keep up violent, uninterrupted action against surface objectives, to the end that it may crush the material and moral resistance of the enemy."[380] Going beyond the achievement of Douhet's cold military objectives, Von Richthofen exhibited a lack of concern for the Polish people and the request shows his darker side. Characteristic of Nazi racial superiority, he callously remarked that Warsaw, "would, in the future, be only a customs station." Instead of approving von Richthofen's request to raze the city, operational orders "were more restrained and only required the bombardment aimed at eliminating those installations judged essential for the maintenance of life in the city."[381]

Contrary to these orders, von Richthofen conducted a massive air attack on Warsaw, which killed 40,000 and had no appreciable affect on the outcome of the campaign. On 25 December, forever known as "Black Monday" to the Polish, Von Richthofen's Ju 52 transports "flew 1,150 sorties, sweating airmen literally shoving out incendiary bombs from the open doors of Ju 52s; a method described…as 'worse than

---

[378] John Weal, *Luftwaffe Schlachtgruppen (*New York, NY: Osprey Publishing, 2003), 19.
[379] Earnest Hooten, *Phoenix Triumphant (*London: Arms and Armour, 1994), 187.
[380] Giulio Douhet, *The Command of the Air,* trans. Dino Ferrari (1942; new imprint, Washington, DC: Air Force History and Museums Program, 1998), 129.
[381] Murray, *Strategy for Defeat,* 31.

primitive.'"[382] Although a French attaché in Warsaw later claimed the attacks were in accordance with the rules of warfare, there is significant evidence to the contrary. The Polish commander in chief, who had earlier fled to Romania, surrendered in absentia to the Germans two days later.[383]

Germany scored an overwhelming victory against Poland and heralded the success of *Blitzkrieg* throughout to the world. The *Luftwaffe* regarded its overwhelming success as the "complete justification of all the hopes and principles which had been enumerated consistently by the German Air Staff and tested experimentally in Spain."[384] When the dust settled, Polish losses were 70,000 dead, 133,000 wounded, and 700,000 taken prisoner versus German losses of 11,000 dead, 30,000 wounded, and 3,400 missing.[385] This overwhelming success infected Germany with the beginnings of a victory disease that would manifest after the fall of France; they indeed seemed unbeatable, at least in short, sharp campaigns. Von Richthofen was no more inoculated than any other general who served in Poland. For example, he would continue to overcome logistic problems through his cunning and sheer strength of will rather than ponder the serious institutional and operational problems underlying the German supply system; indeed, in this and many other ways, *Blitzkrieg* proved to be a liability in long campaigns of attrition.

Terror bombing probably had little to do with the fall of Warsaw, as the Polish were likely to surrender in the face of superior German forces. However, many including von Richthofen believed terror bombing had its place in a campaign. The idea that air forces could undermine civilian morale directly in order to gain strategic ends would drive future German and Allied operations; it would cause the destruction of countless cities and kill many tens of thousands on both sides.

Although the effectiveness of morale bombing was questionable, von Richthofen and other *Luftwaffe* commanders took a more practical lesson regarding coordination between air and ground forces. Von Richthofen was extremely vocal regarding the lack of communications between Tenth Army and his Special Purposes Air Division. The

---

[382] Hooten, *Phoenix Triumphant,* 188.
[383] Spick, *Luftwaffe Bomber Aces,* 40-41.
[384] *The Rise and Fall of the German Air Force,* Air Ministry Pamphlet 248 (Great Britain: Air Ministry, 1948), 53.
[385] Murray, *Strategy for Defeat,* 31.

system worked well enough in a static situation, but during rapid maneuvers the system was all but useless. Von Richthofen specifically lambasted the *Koluft* system and considered its staffing a waste of talent. He emphasized that *Koluft* officers were often in a perfect position to identify targets but had no official communication between themselves and the *Luftwaffe* and therefore played only a minor role in operations.[386] Additionally, the army often became frustrated at *Koluft*s as "the various levels could order reconnaissance squadrons to support other army groups" without their headquarters' awareness.[387]

The *Flivos* system was little better as its officers remained at higher army headquarters and could not relay timely information to the *Luftwaffe* regarding the position of forces. Even if the *Flivos* had useful information, they were unable to communicate directly with either *Koluft* close reconnaissance squadrons or *Luftwaffe* fighter, bomber, or dive bomber units.[388] The Army and the *Luftwaffe* approached the solution from opposite directions. The Army wanted to expand the role of the *Koluft* such that they would both understand operational air force intentions and objectives as well as issue formal close air support requests directly to the *Luftwaffe*. Conversely, the *Luftwaffe* wanted to expand the role of the *Flivos*. Arguments on both sides were as much political as they were practical; for the time being the *Koluft* stayed under Army control and the *Flivos* remained under *Luftwaffe* command.[389] As neither service approved significant changes these issues would continue to manifest themselves during follow-on campaigns. In the meantime, it was up to commanders such as von Richthofen to exercise the initiative to work around them.

Although the invasion of Poland lasted less than a month, von Richthofen once again proved himself a competent commander ready for increased responsibility. His command earned a just reward and on 3 October it became *Fliegerkorps* VIII. Officers working with von Richthofen noted he was strict and often arrogant, but consistently cool under pressure. He was perhaps excessive in relieving staff officers who did not perform up to expectation, but such things can be expected of motivated officers under wartime

[386] Corum, *Wolfram von Richthofen*, 176.
[387] Murray, "The Luftwaffe Experience," 78.
[388] Murray, "The Luftwaffe Experience," 79.
[389] Murray, "The Luftwaffe Experience," 82.

conditions. Most important, von Richthofen demonstrated an almost uncanny ability to sense a problem as it developed and work a solution immediately before things got out of control. This insight is a gift that should not be underestimated; his capacity to see the proper solution and have the courage of conviction to act on it before others would have tremendous payoff in subsequent operations. His proactive style of command meant he spent little time behind a desk once the invasion was underway. By visiting the front personally throughout operations he kept his situational awareness high, which helped him foresee communications and logistical issues as they developed. His hands-on, problem-solving nature also endeared him to the ground forces his units were supporting. In short, von Richthofen demonstrated the aptitude and will to bridge the gap that always seems to exist between air and ground forces. This characteristic would be crucial when supporting General von Kleist in France.

Those he supported can best represent von Richthofen's resounding success in Poland. On 17 September 1939, General von Reichenau, Commander in Chief of the Tenth Army, wrote:

> Dear General von Richthofen: I should like to express my sincere thanks and grateful appreciation to you and to the units under your command for the effective support rendered to the Tenth Army during the battle of Sochaczew. I myself was a witness on several occasions to the extreme effectiveness and accuracy of the operations carried out by your units. It is my personal conviction that our victory could not have been so complete without the support of the Luftwaffe.[390]

Supporting von Kleist in France, 1940

Germany's quick and decisive victory in Poland cemented the effectiveness of offensive operational maneuver warfare in the minds of both Germans and all others who were watching. *Blitzkrieg* would dominate in successive planning iterations of Operation *GELB*, the spring 1940 drive to the West. By Hitler's direction, the German General Staff began planning for *GELB* on 28 September 1939. Initial versions of the plan called for a "strong right wing…intended to overrun the enemy troop assembly area and system

[390] Suchenwirth, *Historical Turning Points in the German Air Force War Effort*, 57.

of defense" along the Maginot Line in a repeat of the 1914 Schlieffen Plan.[391] The planning staff made only minor changes until a German staff officer, carrying its details, compromised it when he made an emergency landing in Belgium on 10 January 1940.[392]

Erich von Manstein, at the time a brilliant general staff officer, seized upon this opportunity to revamp the plan into a much more aggressive version. Von Manstein, who met with Hitler in February, was instrumental in shifting the point of main effort from the right to the center. "The forces…are to fight their war through the French northern border defenses and to continue in the direction of the lower course of the Somme."[393] This offensive thrust would move west from the area between Dinant and Sedan to the English Channel and if successfully executed "automatically meant the division of the Allied armies."[394] Hitler approved of von Manstein's version of Operation *GELB*; it did not hurt that the short, sharp offensive action and the decisive victory it promised reflected the preferred German conduct of war.

General der Kavalerie Ewald von Kleist had the honor of commanding the offensive's *Schwerpunkt,* or main effort, through Allied forces in the Ardennes. Accentuating the faith placed in him, Von Kleist's *Panzergruppe* amounted to 1,260 tanks, almost half of the total German tank availability of about 2,800.[395] As in Poland, the *Luftwaffe* units supporting the army in the West would destroy "the enemy air forces by means of heavy, concentrated blows," attack the "enemy communications system in order to disrupt…the deployment of enemy forces," and interdict "overland transport systems" such as railroads and highways.[396] In addition to these missions it remained the "chief task of the *Luftwaffe* in the western offensive to provide direct and indirect air support for the decision-seeking operations of the Army in the areas of the main effort."[397]

Wolfram von Richthofen's *Fliegerkorps* VIII had the honor of supporting von Kleist's main effort. The *Luftwaffe* reorganized several units after the Polish campaign

---

[391] Wilhelm Speidel, *The Campaign in Western Europe,1939-1940;Part 3, Vol 2,* History of the Air War Study Group, Karlsruhe (Maxwell AFB, AL: USAF Historical Division, Air University, 1958), 30.
[392] Macksey, *Guderian: Creator of the Blitzkrieg*, 97.
[393] Speidel, *The Campaign in Western Europe; Part 3, Vol 2*, 31.
[394] Speidel, *The Campaign in Western Europe; Part 3, Vol 2*, 32.
[395] Macksey, *Guderian: Creator of the Blitzkrieg*, 99.
[396] Speidel, *The Campaign in Western Europe; Part 3, Vol 2*, 28-29.
[397] Speidel, The Campaign in Western Europe; Part 3, Vol 2, 29.

and *Fliegerkorps* VIII fell under *Luftflotte* 2, General der Flieger Hellmuth Felmy commanding. Over the next several months, von Richthofen diligently prepared his air corps for major combat operations against France. Von Richthofen, with his headquarters in a manor house at Grevenbroich near Munster, now commanded four large combat wings, each with 75-90 aircraft. Totaling 350 combat aircraft, KG 77 consisted of 3 Do 17 groups in Düsseldorf, Stuka Wing 77 consisted of 3 Stuka groups at Köln-Butzweilerdorf, Stuka Wing 2 consisted of 3 Stuka groups at Koln-Ostheim, and JG 27 had 4 fighter groups near Krefeld.[398]

Although von Richthofen took some leave and spent many weekends at home during the winter of 1939-1940, he was tireless in preparing his troops for combat and earned his reputation as a stern taskmaster. Von Richthofen was often among his troops, whether welcoming a new air unit, attending promotion and decoration ceremonies, or observing and even participating in maneuver exercises. Completely in line with the German concept of offensive operations, von Richthofen characterized defensive thinking as "cowardice."[399] He directed a full schedule of war games aimed at absorbing lessons from Poland and expected that the adversaries they would face in the West would be formidable in comparison. [400]

Von Richthofen, realizing communications comprised the chief lesson from Poland, set about improving them between his air corps and the army. He gave Major Wurm of the *Luftwaffe* signal troops the unenviable task of re-organizing the highly-complex close battle communications network. Wurm struggled to ensure continuous contact between *Fliegerkorps* VIII and the *Flivo* and *Koluft* liaison units. Most significant, von Richthofen placed radio sets in the *Flivos'* armored cars, which allowed the liaison officers to communicate directly with frontline Panzer units. In the spring von Richthofen conducted an exercise where these *Flivos* controlled Stuka attacks similar to modern-day JTACs. Unfortunately, standardization problems proved intractable and air units would have to begin the campaign using the proven yet inferior ground signal system.[401] Still, von Richthofen was breaking new ground. All of this pre-war activity

[398] Corum, *Wolfram von Richthofen*, 184.
[399] Hans Ring and Werner Girbig, *Jagdgeschwader 27* (Stuttgart: Motorbuch Verlag, 1991), 19.
[400] Corum, *Wolfram von Richthofen*, 184-185.
[401] Murray, "The Luftwaffe Experience," 89.

did not make the air commander popular with the troops, but von Richthofen knew that when combat operations began, *Fliegerkorps* VIII would be ready.[402]

The Germans invaded the West on A-day, 10 May 1940, and Luftflotte 2 supported Fedor von Bock's Army Group B's advance through Belgium. Despite minor operations in Norway during the preceding months, Göring marshaled almost four thousand aircraft for the new offensive, including 1,524 air-to-ground and 1,264 fighter aircraft.[403] This included von Richthofen's *Fliegerkorps* VIII, the "most experienced close air support corps," which highlighted "the importance the Germans placed on destroying the Belgian airfields."[404] In comparison, the French had a total inventory of 1,375 bombers and 1,175 fighter aircraft.[405] At least 1,500 aircraft supported Panzer Group Kleist alone, greater than half of the entire French air fleet.[406] Finally and worst of all, Allied forces were wholly unprepared for German *Blitzkrieg* tactics.

Unlike the *Luftwaffe*, the French Air Force was wholly unprepared to engage in or counter the German concept of *Blitzkrieg*. French air staff officers assumed "land warfare would conform to the patterns and pace of World War I" and thought that ground forces would be "incapable of achieving mobility or advantage on the battlefield."[407] Additionally, most French aircraft were obsolete compared to German fighters. Many fighters that did return from combat sat in disrepair on French airfields due to a pre-war shortage of maintainers. By 1 June 1940, French Air Force records showed an overall operational rate of 29%, with over 60% of fighters and bombers as well as 86% of reconnaissance aircraft grounded due to mechanical or technical problems.[408]

Most important, the French Air Force violated the principle of concentration that von Richthofen demanded of his own air corps during the Polish Campaign. Air Minister La Chambre and Chief of Staff Vuillemin surrendered the air service's organizational structure to the army in February 1940. This single act, perhaps above all others, ensured

---

[402] Corum, *Wolfram von Richthofen*, 191.
[403] David Irving, *The Rise and Fall of the Luftwaffe: The Life of Field Marshal Erhard Milch (*Boston, MA: Little, Brown and Company, 1973), 89.
[404] Murray, "The Luftwaffe Experience," 88.
[405] Higham and Harris, *Why Air Forces Fail*, 58.
[406] Karl-Heinz Freiser and John Greenwood, *The Blitzkrieg Legend: The 1940 Campaign in the West (*Annapolis, MD: Naval Institute Press, 2005), 158.
[407] Higham and Harris, *Why Air Forces Fail*, 59.
[408] Charles Christienne and Pierre Lissarrague, *A History of French Military Aviation (*Washington, DC: Smithsonian Institution Press, 1986), 352-3353.

French defeat in the air. Instead of applying concentrated airpower at a decisive point, ground commanders applied airpower incoherently according to their whims. This piecemeal application of aircraft precluded any operational-level effects and an inability to stem the German *Blitzkrieg*.[409]

As a result, Von Richthofen's *Fliegerkorps* VIII faced little effective Allied opposition. On 10 May, his forces crushed the majority of obsolescent Belgian aircraft on the ground as Göring's airborne troops seized key bridges and airfields throughout Holland. Aircraft would attack airfields at low level in order to achieve surprise; "twin-engine fighters leading with cannon and machine-gun fire and the bombers following closely behind with bombs fused for a delay of a few seconds."[410] These coordinated attacks were highly successful. By the evening of 11 May, the *Luftwaffe* had destroyed up to one thousand Allied aircraft.[411] Having achieved almost complete air superiority in just two days, on 12 May von Richthofen asked his diary, "Where is the enemy air force?"[412] At von Kleist's behest, on 13 May von Richthofen ordered *Fliegerkorps* VIII to support German forces crossing the Meuse at Sedan.

French ground forces were faring little better than their air component. The French Army, as did the air force, expected the linear battles characteristic of World War I and employed their forces in static, linear tactics. German Panzers with their maneuver warfare tactics easily sliced through enemy positions and attacked French tanks from the sides and rear. This slaughter is all the more impressive when considering that the French Hotchkiss and Char-B tanks were superior in firepower to the Panzer III in an equal battle. The French Army was completely unprepared for *Blitzkrieg*. Also, few French tanks had radios with which to communicate orders. This not only limited their coordination, but also meant Panzers cut down several tanks along with their crews when they dismounted to communicate with one another. A pithy critique prepared by the 35th Panzer Regiment summarizes French tank employment as, "leaderless, aimless, poorly led, tactically inferior."[413]

---

[409] Higham and Harris, *Why Air Forces Fail,* 64.
[410] *The Rise and Fall of the German Air Force,* Air Ministry Pamphlet 248, 70.
[411] Irving, *The Rise and Fall of the Luftwaffe,* 89.
[412] Corum, *Wolfram von Richthofen,* 196.
[413] Freiser and Greenwood, *The Blitzkrieg Legend,* 242.

In spite of his superior application of maneuver warfare, von Kleist understood his *Panzergruppe* would still be vulnerable when crossing the Meuse; he requested increased support from von Richthofen's *Fliegerkorps* VIII. *Blitzkrieg* had its limitations; crossing the Meuse concentrated *Panzerkorps* XIX into an exposed and predictable bottleneck that *Fliegerkorps* VIII had to protect until von Kleist established a bridgehead on the other side. French guns protecting the west side of the Meuse were still in action and posed a substantial threat to the smaller-caliber Panzer IIIs.

Von Richthofen quickly sized up this situation as the decisive point and although he was still accountable for providing CAS to his north, he concentrated his Stukas in a massive attack on French positions along the Meuse.[414] Although the 1st Panzer Division would lead the attack, ground commanders understood that this was primarily an air engagement. Tanks and infantry were less effective during the crossing and waited until after the air attacks before crossing the river. The Stukas did not disappoint and bombed for five continuous hours. The French return fire slackened "with every minute that passed."[415] A German sergeant with the 1st Armored Division watched von Richthofen's concentrated airpower in awe:

> Three, six, nine, oh, behind still more, and further to the right aircraft, and still more aircraft, a quick look in the binoculars--*Stukas*! Squadron upon squadron rise to a great height, break into line ahead [formation]…and there, there the first machines hurtle perpendicularly down, followed by the second, there--ten, twelve aeroplanes are there. Simultaneously like birds of prey, they fall upon their victims and then release their load of bombs on the target…It becomes a regular rain of bombs, that whistle down on Sedan and the bunker positions. Each time the explosion is overwhelming, the noise deafening. Everything becomes blended together, along with the howling sirens of the *Stukas* in their dives, the bombs whistle and crack and burst.[416]

Von Richthofen's success in protecting XIX *Panzerkorps* across the Meuse is all the more significant when considering the Allies' collective failure to exploit this crucial opportunity to halt the German advance. At the time, their greatest vulnerability was the massive supply columns that led all the way back to central Germany. Although the losses would have been high, had the Allies been able to concentrate air interdiction

[414] Speidel, The Campaign in Western Europe; Part 3, Vol 2, 174.
[415] *Guderian: Creator of the Blitzkrieg*, 105-106.
[416] Murray, "The Luftwaffe Experience," 91.

attacks on these supply columns they could have stopped the German advance dead in its tracks.[417]

The Allies failed to cut this logistical Achilles' heel for two main reasons: they lacked air superiority and were enamored with strategic bombing. The *Luftwaffe* knocked out the majority of airfields in northern France within the first two days and had air superiority over the majority of France within the first week of operations. Allied aircraft simply could not get through in sufficient numbers to attack German positions without Bf 109s harassing them.[418] This is a logical consequence of air superiority and highlights why it usually comes first in any campaign. At this point in the war the Germans owned the skies and the French could do little about it. As Thucydides once related, "the strong do what they can and the weak suffer what they must."[419]

Second, and perhaps more telling, the RAF was preoccupied with a strategic bombing campaign aimed at targets in the Ruhr region and failed to sustain attacks against German supply columns. Bomber Command entered the war with the firm belief that shortest route to victory lay in overflying ground engagements and attacking enemy morale and industrial complexes directly. The efficacy of strategic bombing in achieving desired ends is a subject of continuing debate, although civilian morale is a generally more elusive target than the war economy.[420]

Instead of concentrating airpower on the supply columns, which were arguably the decisive point, on 15 May Bomber Command sent ninety-nine bombers against cities in the Ruhr. These attacks were "ill-coordinated and futile."[421] Two days later von Kleist's *Panzergruppe* was across the Meuse and the Allied front widened ominously. On 17 May, Bomber Command responded to army cries for support by instead attacking Hamburg and Bremen. The Allies collectively failed to analyze the proper decisive point and therefore found themselves in a protracted war.[422]

---

[417] Freiser and Greenwood, *The Blitzkrieg Legend*, 29.
[418] Murray, "The Luftwaffe Experience," 92.
[419] Robert Strassler, ed, *The Landmark Thucydides* (New York, NY: Touchstone, 1996), 352.
[420] Tami Biddle, *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas about Strategic Bombing, 1914-1945* (Princeton, NJ: Princeton University Press, 2002), 290.
[421] Murray, "The Luftwaffe Experience," 96.
[422] Martin Middlebrook and Chris Everitt, *The Bomber Command War Diaries (*London: Penguin, 1985), 43.

Von Richthofen, on the other hand, understood exactly where the decisive point was and where his forces could best support it. When Heinz Guderian's XIX *Panzerkorps* crossed the Meuse and barreled through Sedan it opened up a twelve-mile gap in Allied lines "wide enough to allow his entire corps to turn right and move westward towards the Channel."[423] This presented two significant vulnerabilities: the ever-lengthening supply lines and greatly exposed flanks. The German supply lines remained largely untouched. The *Panzergruppe's* exposed flank was a new weakness the Allied ground forces would surely attack. The infantry would normally protect these flanks, but they travelled on foot with mostly horse-drawn carriages for support and could not keep up. German commanders were well aware of their vulnerable flanks and even Hitler expressed his personal reservation on any "further measures after forcing the Meuse River crossing."[424]

When *Generaloberst* Gerd von Rundstedt ordered XIX *Panzerkorps* to slow down and wait for infantry support, von Richthofen sensed an opportunity to apply airpower synergistically in a move that would make history. Instead of having infantry support the Panzers, von Richthofen was certain his *Fliegerkorps* VIII could protect the flanks of *Panzerkorps* XIX in its race to the channel. On 16 May von Richthofen flew to Berlin and persuaded Göring to issue orders to the effect that "*Fliegerkorps* VIII is to accompany the Panzer Group von Kleist as far as the sea."[425] This aggressive move further highlights von Richthofen's superior understanding of operational warfare, as he was able to assess operational risk versus potential gain. Although the supply lines were still an issue von Richthofen was confident his air corps could mitigate the risk of Allied flanking attacks on von Kleist's rapidly advancing *Panzergruppe*. Göring also took this opportunity to award von Richthofen a belated, but much-deserved, Knight's Cross for his resounding success in Poland.[426]

With *Fliegerkorps* VIII providing dedicated air support the XIXth *Panzerkorps* continued its race to the Channel in an attempt to cut Allied forces in half. Von Richthofen realized that this decisive point demanded all of his forces and he requested

---

[423] *Guderian: Creator of the Blitzkrieg,* 108.
[424] Freiser and Greenwood, *The Blitzkrieg Legend,* 194.
[425] Speidel, The Campaign in Western Europe; Part 3, Vol 2, 171.
[426] Weal, *Luftwaffe Schlachtgruppen,* 25.

relief from all commitment to forces in the north. On 16 May Göring agreed and issued an order mandating that *Fliegerkorps* VIII devote "itself exclusively to the 'southern front,'" in support of *Panzergruppe* von Kleist.[427] Von Richthofen's air corps performed magnificently and protected *Panzerkorps* XIX's flanks all the way to the coast of France.

On 19 and 20 May Henschels attacked large concentrations of enemy troops on Guderian's right flank near Douai and Le Cateau. On 20 May, after strafing several road columns in the vicinity of St. Pol, von Richthofen's air corps bedded down at Cambrai. French tanks formed up for a massive counter-attack north of Cambrai on 21 May, and the VIIIth's Stuka and Henschels fought a pitched battle directly north of the airfield. With the addition of von Richthofen's 88mm flak guns, the Hs 123s and Bf 109s beat back the French from Cambrai.[428]

As challenging as protecting von Kleist's flank was, however, von Richthofen faced an even greater problem maintaining his supply lines. As the optimal penetration depth for both the Ju 87s and Bf 109s was between 111 and 124 miles and the Hs 123s between 72 and 90 miles, the majority of *Fliegerkorps* VIII usually operated from airfields just behind the rapidly advancing Panzers. Since *Panzerkorps* XIX was always on the move, von Richthofen had to leapfrog his entire *Fliegerkorps* from airfield to airfield along the line of advance.[429] In spite of this logistical nightmare the VIIIth posted daily sortie rates of up to six per aircraft; this stands as a monument to German efficiency compared to one per aircraft per day for the French.[430] Unfortunately, these extremely high sortie rates meant even higher than predicted fuel and ammunition shortages.

In another incredible feat, von Richthofen maintained a fragile hold on his logistics through a series of innovative moves. His troops seized Allied airfields and scavenged fuel and supplies. When necessary, Ju 52s flew supplies forward in a steady stream. Finally, von Richthofen combined nearby individual airfields into airfield groups

[427] Speidel, The Campaign in Western Europe; Part 3, Vol 2, 173.
[428] Weal, *Luftwaffe Schlachtgruppen,* 25.
[429] Speidel, The Campaign in Western Europe; Part 3, Vol 2, 177, 183.
[430] Higham and Harris, *Why Air Forces Fail,* 207.

when possible. Although this made them more vulnerable to attack, it enabled ground personnel to pool scarce resources and streamline command procedures.[431]

Von Richthofen also was adamant about maintaining an effective relationship with his supported ground commander. For example, he always stationed his headquarters and staff next to von Kleist's. This was a highly effective move as maneuver warfare demands flexibility at a moment's notice. This constant and close coordination between air and ground commanders ensured von Richthofen's air corps was always in the correct position to support von Kleist's advance. Von Richthofen was no armchair general. [432]

There was a significant cost to von Richthofen's success, however, and in spite of his innovations, when XIX *Panzerkorps* reached the Channel on 20 May, it was apparent *Fliegerkorps* VIII was close to the breaking point. From 10 to 24 May, *Luftwaffe* "lost 1,005 aircraft, including 810 that were totally destroyed."[433] The operational rate in many units dropped to below 50 percent. Aircrew were also in high demand and the Personnel Department requested the early release of 166 bomber crews, 40 *Stuka* crews, and up to 70 fighter pilots to fill the empty cockpits.[434] Although the *Luftwaffe*'s logistics were severely overstretched, they had supported *Panzerkorps* XIX magnificently, and by 20 May von Kleist's *Panzergruppe* had cut off the British Expeditionary Forces and French northern army at Dunkirk.

In the meantime, however, Allied airpower was growing stronger in the north and German air and ground forces faced increasing resistance. This became clear as von Kleist's armor turned north over the next several days and compressed the Allied pocket. The RAF was becoming more effective. Between 21 and 25 May von Richthofen counted his losses at 25 percent of the total *Luftwaffe* losses in the battle for France. *Generalleutnant* Halder, Chief of the Army General Staff, noted, "For the first time enemy air superiority has been reported by Kleist."[435]

Herman Göring, without consulting von Richthofen, chose this moment to call Hitler and convince him this was the *Luftwaffe*'s "finest hour" and he should concentrate

---

[431] Speidel, The Campaign in Western Europe; Part 3, Vol 2, 183-184.
[432] Speidel, The Campaign in Western Europe; Part 3, Vol 2, 181.
[433] Freiser and Greenwood, *The Blitzkrieg Legend*, 310.
[434] Hooten, *Phoenix Triumphant*, 257.
[435] Hooten, *Phoenix Triumphant*, 258.

the army on tasks other than the capture of Dunkirk.[436] General Jodl, Hitler's principal strategic advisor, overheard the conversation and later noted to his adjutant, "There goes Göring shooting off his big mouth again!"[437] Von Richthofen, as well as most other *Luftwaffe* generals, knew they had lost air superiority over Flanders and were unable to marshal sufficient forces to deliver the coup de grace. Göring's suggestion as well as worry over excessive wear on the Panzers moved Hitler to order Guderian to stand down.[438] When he received these orders, Guderian was "utterly speechless."[439] Von Richthofen was not, however, and wrote in the *Fliegerkorps* VIII war diary, "A victory over England was simply given away."[440]

During the first two weeks of the invasion of France, von Richthofen once again proved a highly competent commander. Although he had barely six months between the campaigns in Poland and France, he spent his time wisely; he built *Fliegerkorps* VIII, honed his logistical system, improved communications between the army and his air corps, made sure he saw and was seen by his troops, conducted several training exercises, and spent quality time with his family. In France von Richthofen once again demonstrated his talent in sensing opportunity on the battlefield; his offer to support von Kleist's flank on his drive to the Channel is ample evidence of this uncommon ability. Finally, he had a superior capacity to solve operational problems such as his vastly stretching logistical lines.

Many historians specifically cite *Fliegerkorps* VIII as "one of the most important instruments of the German *Blitzkrieg,"* because "the primary characteristic of *Blitzkrieg* warfare that enemy resistance should be broken at the point of advance of armored elements by close-support air units, while the bombers prevented the enemy from bringing reinforcements and supplies up to the battlefield."[441] Von Richthofen's ability to concentrate forces at the decisive point was clearly a "decisive factor" in the *Luftwaffe's* success in France.[442]

---

[436] Irving, *The Rise and Fall of the Luftwaffe,* 90.
[437] Irving, *The Rise and Fall of the Luftwaffe,* 90.
[438] Speidel, The Campaign in Western Europe; Part 3, Vol 2, 197.
[439] *Guderian: Creator of the Blitzkrieg,* 118.
[440] Freiser and Greenwood, *The Blitzkrieg Legend,* 300.
[441] Suchenwirth, *Historical Turning Points in the German Air Force War Effort,* 57.
[442] Suchenwirth, *Historical Turning Points in the German Air Force War Effort,* 57.

Von Richthofen's talent in overcoming barriers to achieve operational objectives, however, would later prove both a blessing and a curse. His focus on honing operations to their sharpest edge often prevented him from relating them to larger strategic effects. The *Luftwaffe*'s high operational tempo throughout the war is one causal factor; von Richthofen was incredibly busy and likely had little time to ponder strategic implications. This remained a failing of both the *Luftwaffe* and German High Commands, itself a product of Hitler's failure to make clear his grand-strategic designs or the order in which he wished to achieve them, and of his dismissive attitude towards his enemies. For example, Germany's leadership did not comprehend the implications of the slowly building, yet inexorable, war machine that was awakening in the west.

In late May 1940, stretching supply lines along with the reversing tide of air superiority shows how the *Luftwaffe*'s success hinged on short wars. Although von Richthofen was brilliant at managing logistics, his success concealed an important lesson about *Blitzkrieg:* it was unsustainable without adequate material and personnel to keep campaigns going at high levels of effectiveness. For example, although forward units could make minor repairs on site, aircraft in need of overhaul were loaded on trucks and driven to Germany.[443] In addition, the *Luftwaffe* pilot training pipeline could not produce enough pilots to keep up with demand. Weaknesses such as these were not apparent when Germany won campaigns quickly, but they would manifest themselves in a war of attrition. In this way the "the *Luftwaffe* was a victim of its own success."[444] This lesson would hit home with a vengeance in Germany's prolonged campaign against the Soviet Union, where von Richthofen would once again have ample opportunity to prove his worth.

The Soviet Campaign, 1941-1943

Wolfram von Richthofen's military career culminated during Germany's almost four-year campaign against Russia. Von Richthofen would bring all of his operational experience to bear and the *Führer* would personally acknowledge his success by granting

[443] Higham and Harris, *Why Air Forces Fail*, 208.
[444] Earnest Hooten, *Eagle in Flames: The Fall of the Luftwaffe (*London: Brookhampton Press, 1999), 8.

him the coveted rank of *Generalfeldmarschall.* At the same time, von Richthofen's *Fliegerkorps* VIII along with the majority of the German war machine would suffer from a comprehensive failure to plan strategically and prepare for a long war. *Blitzkrieg* warfare worked magnificently up to the operational level for short, decisive battles. Due to its inherent overextension of logistics and insatiable thirst for human and material resources, however, it would prove utterly disastrous as it devolved into a war of attrition against the Soviet Union.

For those paying attention, by early 1941 the *Luftwaffe* was already showing signs of stress. In May 1940 the *Luftwaffe* was fighting a single-front war and commanded 3,692 total aircraft. As the Soviet campaign began in June 1941, the *Luftwaffe* was now fighting on three fronts and its total strength was already down to 3,451 aircraft. By December, this would drop precipitously to 2,561 total aircraft.[445] In addition, successful Allied strategic bombing operations such as POINTBLANK caused pilot production issues; the number of training hours dropped from an average of 240 through 1942 to less than 120 by 1944.[446]

Germany's leadership refused to acknowledge that they were in a long war and instead continued to fight their preferred type of battle. They completely misunderstood their victory against France; it did not mean they had won the war, as Jodl's memorandum of June 30, 1940 suggested, but rather that "they had acquired the economic and raw material resources to fight a long war."[447] After losing the Battle of Britain, instead of preparing for protracted warfare Germany immediately turned to the Soviet Union. *Luftwaffe* Chief of Staff General Hans Jeschonnek characterized the senior leadership's lack of vision when he said, "At last, a proper war!"[448] Denial went all the way to the top. As Italian Foreign Minister Galeazzo Ciano noted after a meeting in June 1940, Hitler resembled a successful gambler who "has made a big scoop and would like to get up from the table, risking nothing more."[449]

---

[445] Richard Overy, *The Air War: 1939-1945 (*Washington, DC: Potomac Books, 1980), 50.
[446] Muller, *The Luftwaffe Over Germany,* 292.
[447] Murray, *Strategy for Defeat,* 69.
[448] Walter Boyne, *Clash of Wings: Airpower in World War II (*New York, NY: Simon and Schuster, 1994), 325.
[449] Murray, *Strategy for Defeat,* 69.

Germany's turn to the Soviet Union further highlighted Hitler's flawed strategy. In perhaps the "greatest act of hubris in military history," German planners held "broad prejudices concerning the Soviet Union's political stability, military ability, and racial worth."[450] In August 1940, army intelligence estimated the Red Army's strength in the west at 143 of 221 total divisions against Germany's 147 divisions. By May 1941, this estimate would rise to 192 divisions. *Luftwaffe* intelligence was little better. For example, in summer 1941 German air planners estimated Soviet strength at 5,700 aircraft in the west versus the *Luftwaffe*'s 4,270, which included Finnish and Rumanian aircraft. In reality, the Soviet Air Force, or *Voenno-Vozdushnye Sily* (VVS), had closer to 10,000 aircraft in their inventory on the western front alone.[451] Although planning failures such as these belong to Germany as a whole and not to a single *Luftwaffe* general, they nonetheless helped to seal its fate.

In the summer of 1941, however, Germany's destruction was in the distant future and von Richthofen in particular was basking in glory. During the previous summer in France he was incredibly successful in supporting von Kleist's *Panzergruppe*. As a result, on 19 July 1940 von Richthofen pinned on the rank of *General der Flieger,* completely skipping *Generalleutnant*. Although Germany lost the Battle of Britain in the late summer of 1940, most of the blame rests with Göring and the German High Command. For his part, von Richthofen's *Fliegerkorps* VIII valiantly conducted anti-shipping attacks in the Channel and ports of Great Britain and significantly contributed to the 127 ships sunk that year.[452]

In early 1941, von Richthofen took *Fliegerkorps* VIII south to the Balkans in support of the German invasion of Greece. Italian operations in the Mediterranean were faltering and Hitler agreed to help clean up the mess. Von Richthofen, once again supporting von Kleist's *Panzergruppe,* now commanded all air operations over Greece. In a fortuitous turn of events, Yugoslavia became hostile to Germany in late March; now von Richthofen and German ground forces could avoid the strong Greek border defenses in the mountains. Circling around to the west through Yugoslavia instead, von Kleist

---

[450] Geoffrey Megargee, *War of Annihilation: Combat and Genocide on the Eastern Front, 1941 (*Lanham, MD: Rowman and Littlefied, 2006), 26.
[451] Megargee, *War of Annihilation,* 188-189.
[452] Hooten, *Eagle in Flames*, 45.

avoided the elite Greek forces and, with *Fliegerkorps* VIII's support, easily sliced through the poorly equipped main Greek army.[453] Later in April, von Richthofen's air corps quickly established air superiority during the invasion of Crete and drove the Royal Navy out of Cretan waters.[454]

With these recent successes under his belt, von Richthofen arrived in southern Poland in late May 1941 and assessed the role his *Fliegerkorps* VIII would play in the campaign against the Soviets. On March 30 1941, a mere two months before initiating hostilities, Hitler commanded, "The war against the Soviet Union would be a war of extermination" and the "usual rules…of comradeship among soldiers would have to be discarded."[455] Germany deployed over three million of its own soldiers with another half million from its allies along the eastern front. Planners divided these forces into three massive thrusts: north, center, and south. Field Marshall Fedor von Bock commanded the majority of ground forces in Army Group Center. The entire *Luftflotte* 2, *Generalfeldmarschall* Albert Kesselring commanding, would support Bock in his eastern thrust. Von Richthofen's distinguished *Fliegerkorps* VIII remained in Kesselring's air fleet.[456]

The operational air plan against the Soviet Union was in accordance with Regulation 16, *The Conduct of the Air War*. First, the *Luftwaffe* would gain air superiority by destroying the Soviet Air Force. Second, it would conduct interdiction of enemy road and rail traffic as well as provide direct support of ground forces over the battlefield.[457] Finally, the *Luftwaffe* would strike Soviet units and fortifications as well as strategic targets deep within the Soviet heartland when the opportunity arose. This was the *Luftwaffe*'s classic version of an "operational air war," designed to paralyze enemy movement and operations.[458]

When Germany initiated Operation Barbarossa on 22 June, the surprise was almost complete. As part of a deception plan von Richthofen did not move *Fliegerkorps* VIII forward from deep inside Germany to East Prussia until 19 June. Germany's trick

[453] Corum, *Wolfram von Richthofen*, 237-249.
[454] Spick, *Luftwaffe Bomber Aces*, 124-125.
[455] Megargee, *War of Annihilation*, 33.
[456] Megargee, *War of Annihilation*, 43-47.
[457] Deichmann, *Spearhead for Blitzkrieg*, 141.
[458] Corum, *Wolfram von Richthofen*, 266.

worked, as Stalin only allowed his high command to issue a strategic warning to frontier forces on the evening of 21 June. One Soviet border patrol's frantic radio call indicates their level of preparedness. "We are being fired on, what shall we do?" The reply from higher headquarters was equally enlightening: "You must be insane, and why is your signal not in code?"[459] Germany seized the initiative and the cost for the Soviets was high.

Von Richthofen's bomber and Stuka units were an important part of the 637 bombers and 231 fighters that smashed VVS airfields at dawn on 22 June. The carnage during the first week was almost unbelievable; on 29 June German High Command reported the destruction of 4,990 Soviet aircraft with a loss of only 150 German aircraft.[460] On the night of 22 June von Richthofen wrote in his diary concerning the Soviet confusion,"…the single-engine fighter and dive-bomber pilots could not yet fly in formation…Thus certain aircrews experienced in night flying…attacked the Soviet bases with bombs at the moment when German ground forces opened their attack. The confusion was so great," that no enemy air units had taken off before the German bombers arrived.[461] General Halder, Chief of the Army General Staff, confirmed the lack of Soviet coordination. "Russian aircraft shot down…entire bomber squadrons flying without fighter escort."[462] Von Richthofen was so successful that Kesselring claimed air superiority after the first two days and by the end of June shifted 60 percent of the *Luftwaffe* to the second objective; support of the army.[463]

This rapid switch to the secondary mission, while Germany clearly held the initiative, was premature for two main reasons. First, the *Luftwaffe* destroyed the vast majority of Soviet aircraft while still on the ground, meaning their pilots lived to fight another day. Second and more important, by shifting most of their sorties to direct support the *Luftwaffe* allowed the Soviets to reposition their vulnerable aircraft manufacturing and repair facilities from the west to the east out of reach. The transfer of personnel and plants began during the first attacks and by December the Soviets moved

[459] Murray, *Strategy for Defeat*, 81.
[460] Hermann Plocher, "The German Air Force Versus Russia, 1941," USAF Historical Study 153 (Maxwell AFB, AL: USAF Historical Division, Air University, 1965), 41.
[461] Plocher, "The German Air Force Versus Russia, 1941," 85.
[462] Plocher, "The German Air Force Versus Russia, 1941," 41.
[463] Murray, "The Luftwaffe Experience," 189.

1,360 large plants, 10 million workers, and 1.5 million tons of equipment. In the first three months of 1942, these plants would produce 3,600 aircraft and a staggering 25,000 aircraft by the end of the year. Although Germany's output for 1942 was slightly higher at 27,000, they were fighting on three fronts compared to only one for the Soviets. The *Luftwaffe* should "have continued the fight against Soviet air forces with all available power, for they should not have been allowed to recover after the initial knockout blow."[464] Germany would later pay a dear price for this strategic failure.

Kesselring's decision to switch missions closed the window on strategic options, however, and the *Luftwaffe* continued doing what it did best. *Fliegerkorps* VIII supported *Panzergruppe* 3, commanded by *Generaloberst* Hoth, in the northern half of Bock's Army Group Center. To von Richthofen's south, *General der Flieger* Loerzer commanded *Fliegerkorps* II in support *Panzergruppe* 2, commanded by now *Generaloberst* Guderian, making up the southern half of Bock's army. With Moscow as the final objective, Army Group Center planned to drive deep and encircle Soviet forces in the Bialystok-Minsk area.[465]

Von Richthofen's air corps supported Bock's army group as it barreled into the Soviet Union from its initial breakthrough in late June. Crews in *Fliegerkorps* VIII flew numerous daily sorties in support of *Panzergruppe* 3: up to eight for both fighter and Stuka pilots and six for bomber pilots. Von Richthofen's *Flivos*, whose armored cars had been equipped with radios since before the battle for France, were now highly capable and reduced *Luftwaffe* response times to less than two hours.[466] In fact, von Richthofen's air corps performed so well and Bock's advance was so rapid that the rigid bomb lines used to delineate the forward line of troops were useless. Instead, ground forces carried *Reichsbanner* on their vehicles, used pyrotechnics when necessary, and displayed signal panels on the ground when time permitted.[467]

Army Group Center's advance shocked Soviet forces into such massive retreats that the *Luftwaffe* adopted a new operational procedure out of necessity. Usually flying on a broad front in flights of three planes ahead of friendly ground forces, bombers

[464] Plocher, "The German Air Force Versus Russia, 1941," 43.
[465] Plocher, "The German Air Force Versus Russia, 1941," 79.
[466] Hooten, *Eagle in Flames*, 96.
[467] Plocher, "The German Air Force Versus Russia, 1941," 94.

conducting "armed reconnaissance" did their own scouting and immediately attacked any enemy target seen.[468] This mission was so effective that according to the *Luftwaffe* High Command retreating Soviet forces could not even get out of their own way. "Soviet forces caught in the Bialystok-Zelva-Grodno area," the report of 28 June read, "were being hampered in their withdrawal by roads blocked with destroyed vehicles and vast forest fires in the areas around Suprasl and Bolshaya Berestovitsa."[469] Von Richthofen noted in his diary, "All crews had abandoned their tanks in terror during the attack, and horses without their riders, broken loose from the wagons, galloped about the land." He further noted that the morale of the army corps was "excellent and confident" and that his air support was "greatly appreciated."[470] Von Richthofen's crucial support helped Bock's army group liquidate the Smolensk pocket on 5 August. In a sweeping move, the Germans captured over 300,000 Russian soldiers and either captured or destroyed 3,000 tanks.[471]

Not all of *Fliegerkorps* VIII's effects were kinetic, however, and during July von Richthofen was experimenting with leaflet drops in an attempt to convince masses of Soviet troops to surrender. Due to the VIII's rampant success in supporting *Panzergruppe* 3, Russians were deserting in small parties and the army wanted to encourage more deserters. The air corps began dropping leaflets that promised Russians safe passage, but many hesitated as early versions of the "special life insurance certificate" appeared valid for only one person.[472] An improved version that specifically covered several deserters failed to increase the number of defectors. In a flash of insight, *Fliegerkorps* VIII began dropping new leaflets during simulated bombing attacks that stated in classic brevity, "No one is shot! But, if you do not desert immediately, we will come again!" On 11 July von Richthofen noted in his diary that desertion rates began increasing accordingly.[473]

Von Richthofen could not solve all of the army's problems, however, and the massive army pincer at Minsk partially failed. Hoth's 3 *Panzergruppe* left a chink open

---

[468] Plocher, "The German Air Force Versus Russia, 1941," 88.
[469] Plocher, "The German Air Force Versus Russia, 1941," 88.
[470] Plocher, "The German Air Force Versus Russia, 1941," 89.
[471] Earl Ziemke and Bauer Bauer, *Moscow to Stalingrad: Decision in the East* (Washington, DC: Center of Military History, United States Army, 1987), 32.
[472] Plocher, "The German Air Force Versus Russia, 1941," 99.
[473] Plocher, "The German Air Force Versus Russia, 1941," 99.

between Yartsevo and Smolensk large enough that Kesselring estimated 100,000 of 300,000 Soviet troops squeezed through in late July.[474] During the day von Richthofen's air corps could and did strike in deadly waves. At night, however, it was impossible to fix targets in the completely obscured terrain, with its numerous small woods and shrubbery.

More significant, since mid-July von Richthofen's *Fliegerkorps* VIII was once again feeling the strain of logistics. Although the VIIIth lost few aircraft, those that suffered significant damage would travel slowly by ground from forward airfields to Germany for repair. This was a major reason why the *Luftwaffe*'s operational rate decreased to 50-60 percent a few weeks into the campaign. In addition, ground commanders inundated von Richthofen with air support requests. He wrote, "The Army refused to realize that the *Luftwaffe* could not be dribbled out at all places but must be concentrated at major points."[475] Although von Richthofen's air corps needed to reconstitute, there would be no rest.

As the Smolensk pocket finally dissolved and Army Group Center resumed its advance towards Moscow in early August, Hitler decided that Leningrad in the north was now the more important objective and diverted diminishing resources to secure it. Kesselring noted, "The debate within the German hierarchy was prolonged and acrimonious as Hitler imposed a diversive [sic] strategy upon generals whose main aim was to strike, united, against Moscow."[476] Von Richthofen's *Fliegerkorps* VIII was stripped from Kesselring's Second Air Fleet and sent north under the First, commanded by *Generaloberst* Alfred Keller, with orders to be in place for Army Group North's 6 August assault on Leningrad.[477]

Von Richthofen quickly moved his 400 aircraft north and concentrated his firepower in support of Army Group North's assault.[478] In twelve days *Fliegerkorps* VIII flew 4,472 sorties and dropped 3,351 tons of bombs; they deserve much of the credit for

---

[474] Kenneth Macksey, *Kesselring: German Master Strategist of the Second World War (*Mechanicsburg, PA: Stackpole Books, 1996), 97.
[475] Christer Bergstrom and Andrey Mikhailob, *Black Cross/Red Star: Air War over the Eastern Front* (Pacifica, Ca: Pacifica Military History, 2000), 83-84.
[476] Macksey, *Kesselring*, 99.
[477] Plocher, "The German Air Force Versus Russia, 1941," 146.
[478] *The Rise and Fall of the German Air Force*, Air Ministry Pamphlet 248, 167.

IV *Panzergruppe's* breakthrough of Soviet fortifications on 11 August.[479] Ten days later, Army Group North edged closer to its objective, just reaching a line between the northern tip of Lake Ilmen and the Gulf of Finland.[480] The price for *Fliegerkorps* VIII was high, however, with 27 aircraft lost and 143 damaged.

By 8 September Army Group North and its Axis allies encircled Leningrad on land. Despite a massive and abrupt redirection of combat forces Leningrad never fell, as the Soviets sent supplies across Lake Ladoga until Russian force broke the siege in 1944.[481] In any case, Hitler changed his mind two days earlier when he issued a new order on 6 August. In Directive 35, the *Führer* stated the new priorities were Soviet armies that had previously escaped from the Smolensk pocket and were currently enroute to Moscow along with additional forces around Kiev.[482] Keller was alarmed when German High Command ordered *Fliegerkorps* VIII to leave his side and rejoin Army Group Center by 15 September, in support of its push on Moscow. *Generalfeldmarschall* Ritter von Lieb, commander of Army Group North, was also upset as he personally felt von Richthofen's air corps was instrumental in isolating Leningrad.[483]

Despite these concerns, Von Richthofen moved *Fliegerkorps* VIII south near Smolensk in mid-September and rejoined the Second Air Fleet in support of von Bock's Army. Hitler ordered Army Group Center to prepare for an attack by the end of September against Marshal Semyon Timoshenko's Red Army, now east of Smolensk. He further directed columns from both Army Groups North and South to cover the flanks of Army Group Center on its drive to Moscow. German forces were to conduct a double-envelopment from both the north and south with Second Air Fleet reinforcing from the northeast area.[484] Through September and early October, Von Richthofen concentrated his dive bomber units on the flanks of the army group as they enveloped two large Soviet armies in the Bryansk and Vyazma pockets.[485]

By mid-October, however, German operations in the east began slowing down due to worsening weather and stiffening Soviet resistance; by the end of the month the

---

[479] Corum, *Wolfram von Richthofen*, 273.
[480] Plocher, "The German Air Force Versus Russia, 1941," 147.
[481] Plocher, "The German Air Force Versus Russia, 1941," 153.
[482] Robert Forczyk and Howard Gerrard, *Moscow 1941: Hitler's First Defeat (*Oxford: Osprey, 2006), 12.
[483] Hooten, *Eagle in Flames*, 99.
[484] Plocher, "The German Air Force Versus Russia, 1941," 226.
[485] Plocher, "The German Air Force Versus Russia, 1941," 233.

Germans ground to a halt just short of Moscow. Poor weather hampered von Richthofen's flying operations across the board, both bogging down airfields and denying target acquisition. Kesselring noted, "the harbinger of rapidly deteriorating weather…often made flying impossible…and the Army began to demand of the *Luftwaffe* what it could no longer do for itself; it wanted supplies flown in since no longer could a sufficient quantity be dragged up the mired or rutted roads by wheeled vehicles, and the railhead was still far to the rear."[486]

At the same time, Soviet resistance increased significantly as German forces approached Moscow. Soviet defenses, with various reinforcements arriving in droves, concentrated along the main road between Maloyaroslavets and Moscow as well as west of Ruza. On 23 October the *Luftwaffe* High Command reported that in addition to difficult weather, determined Soviet defense had permitted "only local successes."[487] Von Richthofen's air corps posted decent sortie rates when weather permitted and on 25 October flew a large portion of the 455 bombers, 173 fighters, and 23 reconnaissance missions supporting ground forces west of Moscow. Two days later the weather worsened to the point that only a single aircraft flew over the battle area.[488] As a testament to von Richthofen's ground organization, *Fliegerkorps* VIII posted high sortie rates on good weather dates as units quickly repaired damaged aircraft on poor weather days.[489]

In late October, the German High Command demonstrated additional poor judgment when they abruptly ordered the majority of Kesselring's *Luftflotte* 2 to the Mediterranean to support Rommel's *Afrika Korps*. Berlin was trying to balance forces on three fronts and misunderstood the situation in the east; buoyed by Army Group South's recent success in Kiev, German senior leaders considered Moscow all but taken. Kesselring departed on 29 November and only *Fliegerkorps* VIII remained with von Richthofen now commanding all *Luftwaffe* aircraft on the Moscow front.[490] Although an honor for von Richthofen, this move left *Fliegerkorps* VIII as the only air corps near

[486] Macksey, *Kesselring*, 101.
[487] Plocher, "The German Air Force Versus Russia, 1941," 234.
[488] Plocher, "The German Air Force Versus Russia, 1941," 234.
[489] Richard Muller, *The German Air War in Russia (*Baltimore, MD: The Nautical and Aviation Publishing Company of America, 1992), 60.
[490] Hooten, *Eagle in Flames*, 103.

Moscow, with limited support in rapidly deteriorating weather and facing stiffening Soviet resistance.

On 6 December, only a week after von Richthofen assumed control of remaining air forces, Mother Nature finally compelled Hitler to discontinue the attack against Moscow. Although German troops were ill-equipped for the harsh winter, instead of allowing his troops to withdraw the *Führer* ordered the army to hold its ground.[491] Stalin chose this moment to order his armies, supported by 1,376 aircraft, to advance on German positions. Although a featherweight push, this move was a "psychological hammer-blow to the equally exhausted Germans."[492] Von Bock's overextended defense collapsed and several German units began a broad retreat.

Von Richthofen, at times stubborn and heartless, refused to yield ground; this act would personally endear him to Hitler. Further, his unique ability to act calm in times of crisis enabled von Richthofen to "doubt initial reports as being the product of panic."[493] Von Richthofen's forces were at times on the leading edge of battle as German army troops streamed past his forward airfields. As he did in the Condor Legion, von Richthofen ordered 88mm flak units to fire directly on Soviet positions. At times the situation became desperate and without hesitation he ordered ground specialists and pilots to contain local Soviet breakthroughs.[494] When the weather cleared, von Richthofen concentrated his aircraft against only the most dangerous Soviet forces so he could hold the line.

On 16 December as army units continued to fall back, Hitler issued another order forbidding further retreat.[495] General of Engineers Otto Forster, commanding VI Army Corps, retreated in the face of massive Soviet resistance despite this order. Hitler relieved Forster on 30 December and gave von Richthofen temporary command of VI Army Corps. Although command of the army corps would only last a week, in true form von Richthofen immediately demanded that all forces hold their ground. "You can accomplish this! Just make your fullest effort!"[496] The winter weather, overstretched

---

[491] Plocher, "The German Air Force Versus Russia, 1941," 241.
[492] Hooten, *Eagle in Flames*, 103.
[493] Corum, *Wolfram von Richthofen*, 279.
[494] Muller, *The German Air War in Russia*, 61.
[495] Ty Bomba and Chris Perello, *Hitler's Army (*Conshohocken, PA: Combined Books, 1996), 275.
[496] Corum, *Wolfram von Richthofen*, 281.

logistics, and increased Soviet resistance were simply too much. Although the *Luftwaffe* conducted several attacks on Moscow through the winter, the German army never breached the city. Von Richthofen made out rather well, however, and on 26 February personally reported to Hitler, who counted him among his favorite *Luftwaffe* commanders. He promoted him on the spot to *Generaloberst.* Hitler's favorite *Luftwaffe* general would merit increased responsibility throughout the 1942 campaign in the Soviet Union.

General der Flieger Herman Plocher noted that if the Commander in Chief of the *Luftwaffe* had appraised the general situation at the turn of 1942, he would have seen the need to reorganize all German air forces. This was due to four major factors. First, during the crisis along the eastern front retreating army units abandoned irreplaceable artillery and motorized equipment. This made the army almost completely dependent on air support to the point where it was practically its artillery arm. Second, due to dive-bomber operational strength dropping from 278 to 163 aircraft by December 1941, the 458 remaining medium bombers would have to pick up the support role. This precluded any potential strategic attacks in the east. Third, attrition drove operational rates below 20 percent; the *Luftwaffe* would have to commit all remaining aircraft to support thin lines on the ground. Fourth and finally, the paucity of medium and absence of long-range bombers meant the *Luftwaffe* would be unable to stem the tide of enemy personnel and equipment from production areas deep within the Soviet Union.[497]

Although German air and ground forces were in desperate need of reconstitution, the campaign plan for 1942 shifted once again, this time to the south. Operation *BLAU,* a large-scale summer offensive slated to begin as soon as weather and conditions permitted, called for the destruction of as many Soviet forces and as much equipment as possible plus the conquest of the vital Caucasus region.[498] Due to a projected oil shortage, Germany had refocused its 1942 campaign in Russia from Leningrad and Moscow to the southern oil fields in the Baku region near the Caspian Sea.[499] The 1941 campaign in Crimea had initially progressed well, but faced the same difficulties that

[497] Hermann Plocher, "The German Air Force Versus Russia, 1942," USAF Historical Study 154 (Maxwell AFB, AL: USAF Historical Division, Air University, 1966), 12-13.
[498] Plocher, "The German Air Force Versus Russia, 1942," 207.
[499] Erich von Manstein, *Lost Victories (*Novato, CA: Presidio Press, 1982), 209.

Army Group Center did when winter set in. By the end of 1941, Soviet forces had dug-in around Sebastopol and to the east in the Kerch peninsula.[500] The *Führer* had fired many otherwise competent commanders who, contrary to his orders, fell back in the face of fierce Soviet attacks. For the 1942 campaign in the Crimea, Hitler would now rely on two of his favorite generals: Erich von Manstein and Wolfram von Richthofen.[501] General von Manstein, commander of Eleventh Army, would lead the German attack on the Crimean peninsula. Von Richthofen would find out his role while on leave.

In early April *Fliegerkorps* VIII returned to Germany for rehabilitation and its commander looked forward to some much-needed respite. "Arrived in Luneburg on 12 April for a four-week holiday," von Richthofen wrote in his diary on 18 April. War, however, is impatient and waits on no one. "At last! But on 18 April, while entertaining guests, received a phone call from Jeschonnek: By order of the *Führer,* I must immediately leave again, to work at Kerch. Get there quickly, get everything started! Then I can again take a few days off. Formal orders are still to come. No use complaining." The following day von Richthofen flew his Fieseler 156 Stork to Berlin and, along with Jeschonnek, rang Hitler from the Air Ministry. "The *Führer* insisted in a very respectful manner that I should take part at Kerch, because I'm the only person who can do the job." Von Richthofen further wrote how Hitler emphasized that the risk of failure, "must be minimized, because the first blow of this year must be successful."[502]

Against the *Luftwaffe*'s wishes, Hitler personally moved von Richthofen's *Fliegerkorps* VIII from Army Group Center to support von Manstein's army. Although Fourth Air Fleet commander General Lohr technically controlled operations in the south, von Richthofen would answer only to Göring. Von Richthofen knew his early promotion and Hitler's personal faith in him would upset the Fourth Air Fleet's leadership. They were "deeply peeved and viewed my arrival with considerable mistrust," von Richthofen wrote in his diary. His criticism of their "not very convincing preparations" for the offensive made things worse. Von Richthofen often displayed a biting sarcasm; he

[500] Plocher, "The German Air Force Versus Russia, 1942," 156-157.
[501] Corum, *Wolfram von Richthofen,* 285.
[502] Hayward, *Stopped at Stalingrad,* 70-71.

compared eating in the officers' mess to, "sitting in a house with a corpse…in the evening the fleet drowned its grief in alcohol."[503]

Although von Richthofen concluded local air commanders in Crimea "must be woken from their winter sleep," his relationship with von Manstein was positive from the start. On 22 April the two generals held a lengthy conference to review the campaign plan. Although the potential for an ego clash between these two brilliant yet conceited personalities was high, they got along exceedingly well and held the highest respect for one another. "Manstein was surprisingly mellow and accommodating," von Richthofen noted, "He understood everything. It was extremely uplifting."[504]

The alliance between these two men was among the best relationships between an air and ground commander during World War II.[505] Von Manstein knew that his forces were numerically weak; the 11th Army had 180 tanks compared to the Soviets' 347, and he would have to rely on the best possible air support.[506] The feeling of respect between the generals was clearly mutual as Von Manstein later noted:

> Baron von Richthofen was certainly the most outstanding *Luftwaffe* leader we had in World War II. He made immense demands on the units under his command, but always went up himself to supervise any important attack they made. Furthermore, one was constantly meeting him at the front, where he would visit the most forward units to weigh up the possibilities of giving air support to ground operations. We always got on extremely well together, both at Eleventh Army and later on at Southern Army Group. I remember von Richthofen's achievements and those of his Air Corps with the utmost admiration and gratitude."[507]

By late spring Von Richthofen had effectively arrayed his 600 aircraft and liaison elements in preparation for combat operations.[508] *Fliegerkorps* VIII would launch south against Sebastopol and east to Kerch from bases in the center of the Crimean Peninsula. He commanded a remarkably strong force at the start of the campaign: eleven bomber, three dive-bomber, and seven fighter *Gruppen*.[509] He enhanced the effectiveness of his *Flivos* by pushing them down to the regimental level where they would be closer to the

---

[503] Hayward, *Stopped at Stalingrad,* 70-72.
[504] Hayward, *Stopped at Stalingrad,* 73.
[505] Hayward, *Stopped at Stalingrad,* 73.
[506] Ziemke and Bauer, *Moscow to Stalingrad,* 262.
[507] Manstein, *Lost Victories,* 235.
[508] *The Rise and Fall of the German Air Force,* Air Ministry Pamphlet 175.
[509] Hayward, *Stopped at Stalingrad,* 73.

front and therefore more effective. The *Koluft*, a largely redundant system outside *Luftwaffe* control, was abolished altogether. Von Richthofen tirelessly streamlined communications between air and ground forces. In an unprecedented act of trust, he ordered *Fliegerkorps* VIII to communicate directly with the army corps and abolished the requirement to coordinate with either army or air fleet headquarters.[510] These changes are only possible when commanders have a relationship such as the one that existed between von Richthofen and von Manstein.

Von Manstein held the final brief for Operation *Trappenjagd* on 2 May with von Richthofen present. He explained the campaign as a brute force ground effort aimed at pushing the Soviets off the Kerch peninsula. The Eleventh Army would utterly rely on air support to "pull the infantry forward."[511] Late at night on 7 May, thirty German assault boats eased out of the mine-strewn Feodosiya harbor and steered northeast along the coast, picking up infantry along the way. At 0315 in the morning the infantry jumped off their boats behind a rocket and artillery barrage.[512]

An hour later, von Richthofen's Stukas and fighter squadrons blasted the Parpach line, an exceedingly strong row of concrete barriers marking the Soviets' main defense of the Kerch peninsula.[513] The *Fliegerkorps* VIII had complete command of the sky by daybreak and smashed Soviet positions. Off to an auspicious start, the VIIIth flew over two thousand sorties and shot down eighty Soviet aircraft during the first day alone.[514] With massive air support from *Fliegerkorps* VIII the 11th Army quickly penetrated the Parpach line at several points and by 11 May the 22nd Infantry Division turned north, reached the Sea of Azov, and enveloped all eight divisions of the Soviet 51st Army.[515] By 12 May the 11th captured 29,000 Russians along with 220 guns and 170 tanks.

The VIIIth provided outstanding support to von Manstein's forces, but behind the scenes von Richthofen was struggling to keep operations and communications flowing smoothly. On 12 May, for example, von Richthofen noted in his diary that a certain signals expert who disagreed with him, "is and remains worthless and a pompous ass!

---

[510] Corum, *Wolfram von Richthofen*, 285.
[511] Ziemke and Bauer, *Moscow to Stalingrad*, 264.
[512] Ziemke and Bauer, *Moscow to Stalingrad*, 266.
[513] Plocher, "The German Air Force Versus Russia, 1942," 178.
[514] Ziemke and Bauer, *Moscow to Stalingrad*, 266-267.
[515] Plocher, "The German Air Force Versus Russia, 1942," 183.

The signals personnel here are pathetic and fail constantly."[516] Von Richthofen did not view command as a popularity contest and did what he felt necessary to get the job done. His resilience was effective. On 15 May the entire Kerch peninsula was in German hands and the campaign switched to mop-up operations. *Trappenjagd* ended on 19 May with the capture of over 150,000 Russians.[517]

With the Kerch peninsula secure, von Manstein and von Richthofen turned towards the last holdout on the Crimean peninsula: Sebastopol. Often described as "the strongest land and naval fortress in the world," the port city boasted powerful defensive positions along the coastal area from Mamashni through Cape Kherson to Balaklava.[518] Since November 1941 almost the entire population carved bunkers and firing positions from rock and laid minefields throughout the area. The Soviets reinforced the port with seven infantry divisions, a dismounted cavalry division, three naval infantry brigades, two tank battalions, 70 artillery batteries, sixty additional aircraft, and the heavy guns of the Soviet Black Sea Fleet.[519] Sebastopol would not go quietly.

Many historians consider operations in the Crimean peninsula a strategic diversion and think the Germans should have instead sealed and bypassed it. Von Manstein, however, even in retrospect maintained, "The decision to make 11th Army take Sebastopol…was the correct one. Had we continued to invest the fortress…half the 11th Army would have continued to be tied up in the Crimea."[520] Hitler flew in to Poltava on 1 June to lay out the general plan of attack in the east for Operation *BLAU,* the spring and summer offensives.[521] Back in February Hitler had fully agreed with von Manstein's campaign for the Crimean peninsula and once again displayed his faith in him by choosing not to interfere.[522] Von Manstein tailored his plan to maximize von Richthofen's support. "We could not entertain any idea of using the central portion of the siege front for a decisive operation because artillery and air support—our two main trumps—could never become entirely effective in the wooded area there and our losses

[516] Hayward, *Stopped at Stalingrad*, 81.
[517] Plocher, "The German Air Force Versus Russia, 1942," 183.
[518] Plocher, "The German Air Force Versus Russia, 1942," 185.
[519] Plocher, "The German Air Force Versus Russia, 1942," 186.
[520] Manstein, *Lost Victories,* 238-239.
[521] Plocher, "The German Air Force Versus Russia, 1942," 187.
[522] Manstein, *Lost Victories,* 238.

would be too great."[523] Von Manstein therefore decided to attack from the north-east and the south, where airpower would be more effective against open targets.

Von Manstein met with von Richthofen and requested five items. First, gain and maintain air superiority such that Soviet air forces could not support Red Army units. Second, day and night attacks against the fortress of Sebastopol aimed at breaking the morale of Soviet defenders. Third, direct support for lead units of the 11th Army. Fourth, neutralization of Soviet artillery deployed in rear areas. Fifth, interdiction by air of Soviet attempts to reinforce by sea. These requests were in line with the *Luftwaffe*'s way of war with the exception of targeting enemy morale. However, based on his misguided experience in Poland, von Richthofen personally requested this as the best way to support 11th Army's attack.[524]

On 7 June von Manstein's artillery units opened fire as a prelude to the infantry assault.[525] Several of von Richthofen's flak units joined in to assist 11th Army's heavy artillery batteries as *Fliegerkorps* VIII already held air superiority and had little need for them.[526] Von Manstein praised von Richthofen: "As a result of the overwhelming support by the powerful assault artillery and *Fliegerkorps* VIII, it was possible to cross the Kamyshly gully and Belbel valley on the first day and gain a footing on the commanding heights south of the latter."[527] The Eleventh Army slowly pushed in Soviet defenses and von Richthofen's bombers dutifully pounded enemy fortifications into submission while preventing reinforcements by sea. The close coordination between air and ground forces once again paid off; on 4 July 11th Army claimed Sebastopol and counted over 90,000 prisoners.[528]

On the same day, von Richthofen took command of the entire *Luftflotte* 4 from Lohr. Von Richthofen had relinquished command of *Fliegerkorps* VIII the day prior to his highly competent Chief of Staff Lieutenant General Martin Fiebig.[529] Von Richthofen's air fleet now contained both *Fliegerkorps* VIII and *Fliegerkorps* IV, commanded by the equally competent and future *Luftwaffe* Chief of Staff, Lieutenant

---

[523] Manstein, *Lost Victories*, 242.
[524] Plocher, "The German Air Force Versus Russia, 1942," 188-189.
[525] Manstein, *Lost Victories*, 248.
[526] Plocher, "The German Air Force Versus Russia, 1942," 188.
[527] Manstein, *Lost Victories*, 249.
[528] Ziemke and Bauer, *Moscow to Stalingrad*, 320-321.
[529] Plocher, "The German Air Force Versus Russia, 1942," 210.

General Gunther Korten. Von Richthofen had already begun setting up his headquarters at a former commissar school in Kursk in late June and now immediately set to work planning his support of Operation *BLAU*.[530]

The *Luftwaffe*'s plan in support of *BLAU*, although in accordance with Regulation 16, had specific supplementary guidance from Hitler himself. The *Führer* issued Directive 41 on 5 April 1942. In addition to its usual missions of air superiority and direct support to the Army, the *Luftwaffe* would further assign air forces to protect Army Group South's forces along the Dnieper River railway bridges and destroy Don River bridges Soviet forces could use to mount a concentrated attack. As it was Hitler's fickle tendency to switch focus with little warning, the *Luftwaffe* would also maintain operational ground service installations that allowed the "rapid transfer of air units…to the central and northern zones" of the eastern theater.[531]

Army Group South, under *Generalfeldmarschall* von Bock, had already begun combat operations on 28 June and by early July had crossed the Don River and was pushing in two major directions: Stalingrad and the Caucasus. Due to the vast area under its command, Army Group South would split into two groups, Army Groups A and B. This was a subtle yet foreboding act; spreading army operations to such an extent violated the principle of concentration and would eventually cripple both the *Luftwaffe*'s and the army's own logistical and operational support capabilities. This would take many months, however, and during early operations the Germans enjoyed their typical initial successes.[532]

Von Richthofen's air corps was off to a good start. It quickly challenged the Soviets for air superiority and on 8 July alone his fighters shot down 33 Soviet planes and set another 35 on fire. The following day *Fliegerkorps* VIII shot down 40 planes. They also targeted Soviet airfields near the front as on 13 July fighters downed 12 bombers as they took off from an airfield next to the Don River. On the same day, his ground attack aircraft destroyed 20 aircraft in a single attack against Kamensk airfield.[533] In addition, von Richthofen's bombers conducted several interdiction missions, repeatedly striking

[530] Ziemke and Bauer, *Moscow to Stalingrad*, 131.
[531] Plocher, "The German Air Force Versus Russia, 1942," 209.
[532] Plocher, "The German Air Force Versus Russia, 1942," 215-216.
[533] Plocher, "The German Air Force Versus Russia, 1942," 214.

Soviet columns, assembly areas, and rail routes both leading up to the front and over the Don and Donets River bridges. Although they enjoyed great initial success, even in early July the *Luftwaffe*'s sortie rates were falling due to their need to leapfrog airfields forward in order to keep up with the army.

For those able to read tea leaves, early German successes combined with poor intelligence spelled disaster. Unrecognized by Germany at the time, the fact that Army Group South gained ground so quickly was not so much that their forces were superior, but that the Soviets had altered their strategy for 1942. Instead of standing their ground and becoming enveloped by superior maneuver forces, the Soviets instead yielded ground in order to draw German forces in.[534] Also, the Germans had greatly underestimated Soviet force strength for the summer of 1942. The official Soviet postwar history claims, "1,005,000 men, 13,540 artillery pieces and mortars, and 894 tanks took up their assigned positions in the staging areas, supported by 1,115 combat aircraft."[535] Although the Germans had an equal number of troops at 1,011,000 they were spread throughout the theater and would never be able to concentrate.[536] As the Germans continued to enjoy several tactical successes throughout the later summer and fall they greatly overextended themselves to both the east and south. Even worse, Army Group B was unwittingly approaching a trap carefully laid at the Soviets' chosen decisive point: Stalingrad.[537]

By early August Sixth Army, commanded by *General der Panzertruppe* Friedrich Paulus, was on the outskirts of the city and von Richthofen's air fleet supported accordingly. *Fliegerkorps* VIII initially concentrated on railroads, river traffic along the Volga, and interdicting Soviet supply columns to the east that could later pose a threat to Sixth Army. Eager to promote how important his flak units were in supporting panzer spearheads, von Richthofen noted in a report that, "the 1st Battalion, 12th Flak Artillery Regiment, using its total force of five batteries, succeeded in preventing the escape of strong Soviet forces from a pocket formed by German motorized units."[538] German troops penetrated Stalingrad to the Volga in mid-September when they started facing

[534] Ziemke and Bauer, *Moscow to Stalingrad*, 344.
[535] Ziemke and Bauer, *Moscow to Stalingrad*, 224.
[536] Ziemke and Bauer, *Moscow to Stalingrad*, 224.
[537] Plocher, "The German Air Force Versus Russia, 1942," 214.
[538] Plocher, "The German Air Force Versus Russia, 1942," 222.

severe Soviet resistance. In the second half of September Paulus "barely advanced" as his men fought through the city street by street.[539]

As the battle in the streets of Stalingrad rapidly devolved into a chaotic mess of urban combat in close quarters von Richthofen put his foot down. On 1 November, he met with Paulus and bluntly told him that his air support requests were a misapplication of airpower. His aircraft were now dropping bombs, "less than a hand grenade's throw from the German infantry." At that range, von Richthofen argued, ground troops should be able to fend for themselves. The trouble brewing out of sight to the east, however, soon overshadowed this bickering. Neither the German Army nor the *Luftwaffe* had sufficient forces and depth to interdict the imminent Soviet offensive that would turn the tide of the war against the Germans.[540]

The Soviets sprang their trap, called Operation URANUS, on 19 November 1942. Artillery fire followed by Soviet tank forces assaulted from the north against Sixth Army and the Fourth Rumanian Army, which as a much weaker force was only supposed to provide cover to the German left flank. Although Sixth Army held, the Rumanian line to their west broke immediately. Failure is a costly, yet effective, teacher, and the Soviets had learned much from Germans the previous year; they could now conduct maneuver warfare with combined arms.[541] Von Manstein later remarked that their tank forces pushed in depth, "just as we taught them to do."[542]

South of Stalingrad, the second great Soviet pincer drove toward Kalach.[543] The Soviets had timed their attack well as poor weather precluded any significant assistance from the *Luftwaffe*. "Rain, snow, and ice-forming have completely prevented air operations," *Luftflotte* 4*'s* war diary read, "and the *Fliegerkorps* VIII, from its command post at Oblivskaya, can direct only a few single aircraft to the attack. It is impossible to close the Don River bridges by bombing. It is not even possible to gain an insight into the situation by aerial reconnaissance. We must have good weather soon, otherwise there

[539] Ziemke and Bauer, *Moscow to Stalingrad,* 200.
[540] Muller, *The German Air War in Russia,* 91.
[541] Klaus Uebe, *Russian Reactions to German Airpower in World War II*, USAF Historical Study 176 (Maxwell AFB, AL: USAF Historical Division, Air University, 1964), 28-32.
[542] Manstein, *Lost Victories,* 295.
[543] Hayward, *Stopped at Stalingrad,* 231.

is no longer any hope."[544] On 23 November, the two great Soviet pincers, having exceeded even Stalin's greatest expectations, met near the town of Sovietskii.[545]

For whatever reason, Paulus waited until Soviet forces almost completely enveloped his army before radioing Hitler on 22 November and stating, "All his corps commanders considered it absolutely imperative that the army should break out to the south-west."[546] Hitler either could not or would not acknowledge the looming catastrophe and, in perhaps his worst single decision of the entire war, ordered Sixth Army to stand where it was, "regardless of the danger of a temporary encirclement."[547] Hitler thought the army forces from the south would be able to reach Paulus in time: this turned out to be a poor assumption. Both Göring and Jeschonnek share much of the blame; they convinced Hitler that *Luftflotte* 4 would be able to resupply Paulus in Stalingrad until reinforcements could arrive.[548]

Von Richthofen's *Luftflotte* 4 had neither the aircraft nor the personnel to support anything even close to what he needed to sustain the entire Sixth Army. In a previous operation the *Luftwaffe* supported 100,000 encircled men at Demyansk, but they only required 300 tons of supplies per day.[549] On the best of days, its airlift capacity would be 350 tons and the Sixth needed at least 600 tons. Even after stripping aircraft from training bases throughout the Reich and sending Ju 52s, Ju 86s, and He 111s to the front the *Luftwaffe* would never come close to such a level.[550] When Fiebig heard his *Fliegerkorps* VIII was tasked he exploded, "Supply an entire army by air? Impossible! Our aircraft are heavily engaged in Africa and on other fronts. I must warn against exaggerated expectations."[551]

Von Richthofen agreed with Fiebig's assessment. Noting in his diary "Sixth Army believes is will be supplied by the air fleet in its hedgehog positions," von Richthofen vowed to, "Make every effort to convince (them) that this cannot be

[544] Plocher, "The German Air Force Versus Russia, 1942," 252.
[545] Hayward, *Stopped at Stalingrad*, 231.
[546] Manstein, *Lost Victories*, 301.
[547] Ziemke and Bauer, *Moscow to Stalingrad*, 473.
[548] Murray, *Strategy for Defeat*, 151.
[549] Hayward, *Stopped at Stalingrad*, 235.
[550] Murray, *Strategy for Defeat*, 152.
[551] Plocher, "The German Air Force Versus Russia, 1942," 261.

accomplished, because the necessary transport resources are not available."[552] To no avail, he urged Paulus to make a breakout while he still could. Von Richthofen contacted the German High Command and tried to convince them of the futility of the escapade, but his efforts were to no avail. In mid-November, Hitler sent von Richthofen a message back. Intercepted and decrypted by the Allies' ULTRA, it said, "I am aware of the difficulties of the fight for Stalingrad and of our diminished battle strength."[553] Von Richthofen "seemed to be the only one who was unduly disturbed by what was happening at Stalingrad."[554]

The *Führer* simply could not understand what his front-line general already did. By 25 November von Richthofen resigned himself to conducting the airlift the best he could. "An order was an order," he wrote in his diary, noting bitterly that he felt little more than a "highly paid noncommissioned officer."[555] For the first time, von Richthofen was visibly rattled and lost his appearance of outward calm. On 27 November, he rode with Major Alexander Stahlberg, von Manstein's adjutant, from the airport to a conference. The adjutant noted how von Richthofen muttered to himself on the ride to the headquarters, "impossible…even to imagine such a thing."[556]

As predicted, the airlift was a failure before it even began. Young crews, including valuable pilot-training instructors, flew scavenged transport aircraft from throughout the Reich; it was over 1,200 miles to the front. Inexperience, weather, and marginal airfields caused countless accidents and lowered in-commission rates to as low as 10 percent.[557] On only three days during December did von Richthofen's transports manage to fly over 300 tons into Stalingrad; on most days the best they could do was 100 tons; this was tragically short of Sixth Army's request.[558]

On 19 December, after repeated attempts to convince Hitler to relent and allow Sixth Army to break out, von Manstein partially succeeded. The *Führer* allowed Paulus

---

[552] Hayward, *Stopped at Stalingrad,* 236.
[553] *Ultra: History of US Strategic Air Force versus German Air Force*, United States National Security Agency, (Washington, DC: National Security Agency, 1945), 36.
[554] Suchenwirth, *Historical Turning Points in the German Air Force War Effort,* 100.
[555] Murray, *Strategy for Defeat,* 152.
[556] Alexander Stahlberg, *Bounden Duty: The Memoirs of a German Officer, 1932-1945* (London: Brassey's, 1990), 222.
[557] Murray, *Strategy for Defeat,* 152.
[558] Murray, *Strategy for Defeat,* 154.

to attack in a south-westerly direction and rejoin with Fourth Panzer Army, but only if he maintained forces on the northern, eastern, and western fronts around Stalingrad. This was impossible and von Manstein made two major objections: Sixth Army could never marshal enough offensive force to punch through while maintaining a stand in the city and both his Don Army Group and Army Group A, which Hitler had previously tasked to join with Paulus, were at risk of envelopment themselves.[559]

Von Richthofen continued to resupply Sixth Army throughout January and the first few days of February, but the army was rapidly approaching starvation. *Generalfeldmarschall* Milch ordered *Generaloberst* Erich Thiel to fly in to Stalingrad and appraise the situation in person. On 20 January, Paulus was clearly distraught when he conveyed a sense of hopelessness to the hapless Thiel:

> Today is the fourth day my people have had nothing to eat. We could not recover our heavy weapons, because we have no fuel. They are lost. Our last horses have been eaten. Can you picture the soldiers diving on an old horse cadaver, breaking open its head, and devouring its brains raw?... What should I, as an army commander, say when a man comes to me and begs, *Herr Generaloberst*! A crust of bread? Why did the *Luftwaffe* say that it could carry out the resupply mission? Who is the man responsible for mentioning this possibility? If someone had told me that it was not possible, then I would have broken out…[560]

Although Paulus was at least partially responsible for his own situation, these words convey how the *Luftwaffe* High Command misrepresented its ability to support the Sixth Army. If Göring had flown in instead of Thiel, Paulus probably would have shot him. Von Richthofen had long lost faith in Göring, having remarked to Jeschonnek in December 1942 that "My confidence in our leadership is rapidly sinking to nothingness."[561] *Luftflotte* 4 continued to deliver what they could, but daily supplies from 24 December through 27 January never even reached 100 tons. In the end, the Sixth Army never broke out and linked with Fourth *Panzer* Army. The largest delivery in 1943 was 135 tons on 31 January; Paulus surrendered to the Soviets on the same day. From 24

[559] Manstein, *Lost Victories,* 337-338.
[560] Muller, *The German Air War in Russia,* 99.
[561] Muller, *The German Air War in Russia,* 98.

November 1942 to 2 February 1943, the *Luftwaffe* lost nearly 500 aircraft and 1,000 flight crew members in its futile attempt to supply the condemned Sixth Army by air.[562]

In the aftermath of Stalingrad, Hitler seemed out of character as he softened his approach and acknowledged his colossal mistake; he apparently recognized the need for damage control with his top generals. He met with Milch, von Manstein, and von Richthofen in turn and was surprisingly congenial and accepted responsibility for the entire debacle. On 10 February von Richthofen first met with Göring, who protested lamely that he had little choice and had to volunteer the *Luftwaffe* for the airdrop mission. Von Richthofen did not suffer the fool. "If you can't trust your lucky star for your personal safety," he said, "then you have no right to believe that destiny has called you for greater things."[563] When the meeting adjourned, Göring was clearly worried von Richthofen would blame him during the next day's meeting. His fear was unfounded.

On 11 February von Richthofen spoke with Hitler in a meeting that highlights both his depth of character and willingness to dissent even at personal risk. Not surprisingly, as a professional officer von Richthofen likely did not find it appropriate to denounce Göring to his superior. Instead, he told Hitler frankly that the *Führer* was wrong on several counts.[564] Hitler completely agreed with von Richthofen's assessment. When Hitler asked what he thought of von Manstein, von Richthofen sensed that perhaps Jodl or Keitel were trying to shift blame in order to keep their jobs. Citing von Manstein as, "the best tactician and operational commander we have," von Richthofen bluntly added that like other good commanders, "he must be given tactical freedom to act as their own local experience dictates."[565]

Pressing his point, von Richthofen further attacked Hitler's personal leadership style saying it was wrong to, "lead them by the scruff of the neck as though they were children." Hitler indignantly replied that had he not kept his generals under close guidance, "they would be fighting in Germany by now." Undeterred, von Richthofen refuted, "If you can't trust your most important figures, you must replace them." Hitler complained that he was often let down by commanders who always lied and "did little

---

[562] Suchenwirth, *Historical Turning Points in the German Air Force War Effort,* 104.
[563] Hayward, *Stopped at Stalingrad,* 320-321.
[564] Corum, *Wolfram von Richthofen,* 312.
[565] Hayward, *Stopped at Stalingrad,* 321.

else." With the failed airlift mission in mind Von Richthofen replied, "This is of no interest either to us at the front or to future historians." Finally, he pointed out that the *Führer* alone "was responsible for the success or failure of operations," and that there was "no point in cursing or blaming his advisors."[566] The *Führer* frowned disapprovingly, but inwardly admired the air leader's candor and moral courage.[567]

Great risk occasionally yields the greatest reward. Few if any officers displayed the courage necessary to address the *Führer* in such a manner. As it turned out, this was to be von Richthofen's crowning achievement. Although Hitler had sworn he would never again create another *Generalfeldmarschall,* on 15 February he announced the promotion.[568] For perhaps the first time *Generalfeldmarschall* von Richthofen could not hide his joy; although he would not openly admit it he longed for fame. His ancestors would surely be proud.[569]

Von Richthofen returned to *Luftflotte* 4 just as von Manstein was launching his counteroffensive against Soviet positions in Kharkov. At the time, both operational rates and force structure at the beginning of February represented a wartime low for the *Luftflotte*; the fleet dropped from 3,664 aircraft in June 1941 to 2,165 of all types. Yet von Richthofen somehow managed to redeploy his scattered forces "within the framework of a new offensive program" by the middle of the month and posted 1,145 and 1,486 sorties on 22 and 23 February respectively.[570] This was all the more significant as von Richthofen's fleet was officially reconstituting and quickly "thrown into the battle."[571] *Generalleutnant* Plocher noted the main factors behind von Richthofen's success "were extreme flexibility, good coordination, and concentration. Another factor…was Richthofen's reservation of the right to switch his area of main effort from one air corps to another as the tactical situation required."[572]

With *Luftflotte* 4's crucial support, von Manstein recaptured Kharkov on 15 March. This marked the last major German operational success on the eastern front,

---

[566] Hayward, *Stopped at Stalingrad,* 321.
[567] Hayward, *Stopped at Stalingrad,* 321.
[568] Hayward, *Stopped at Stalingrad,* 321.
[569] Corum, *Wolfram von Richthofen,* 314.
[570] Muller, *The German Air War in Russia,* 108.
[571] Hermann Plocher, "The German Air Force Versus Russia, 1943," USAF Historical Study 155 (Maxwell AFB, AL: USAF Historical Division, Air University, 1967), 22.
[572] Plocher, "The German Air Force Versus Russia, 1943," 22.

"although the effort required an almost superhuman effort on the part of von Richthofen and his staff."[573] Von Richthofen was never one to rest on his laurels and always put forth his fullest effort. He remained with *Luftflotte* 4 through the spring and was preparing for the Operation against Kursk when he was transferred to the Mediterranean in mid-May to take command of *Luftflotte* 2.[574]

Germany's experience in the Soviet Union highlights the *Luftwaffe's* penchant for concentrated air attacks in close support of armored forces; this preference is at least partially responsible for its downfall. Von Richthofen himself was among the best at this technique, having "built up his reputation as the foremost exponent of intensive close-support operations."[575] Like the vast majority of Germany's senior officers, however, he never fully understood that, in the end, no amount of battlefield success could translate into ultimate victory. Although *Blitzkrieg* was immensely successful on the Polish, French, and Balkan battlefields, by the end of 1942 its inability to produce similar results on the Russian front was apparent to anyone paying attention. The Air Ministry for Intelligence in Great Britain conducted a then classified post-war analysis of Germany's strategic failure and offers a summary of Germany's operational miscalculation in Russia that remains valid today:

> This was not only due to the immense length of the front, which meant that every concentration of forces for attack left the Germans with an exposed flank, but also to the depth of the battlefield. The Soviets exploited these circumstances to the full by withdrawals which extended the German lines of communication until the striking force of the Luftwaffe, drawn far forward away from its supply bases, was attenuated and hampered by maintenance difficulties. Thus the peculiar conditions of warfare in Russia never enabled the established German air strategy of combining the strongest possible close support with heavy attacks on factories and rear supply areas to result in final victory in spite of great initial successes.[576]

Most of the blame for this failure rests with the high command, however, and not the operational commanders who did their utmost to hold their operations together. Von Richthofen faced substantial adversity during his two years in the east and he could look

---

[573] Muller, *The German Air War in Russia*, 109.
[574] Hooten, *Eagle in Flames*, 224-225.
[575] *The Rise and Fall of the German Air Force*, Air Ministry Pamphlet 248, 67.
[576] *The Rise and Fall of the German Air Force*, Air Ministry Pamphlet 248, 183.

back on his commands with a certain amount of deserved pride. Arguably the *Luftwaffe*'s best operational air commander, he held fast to his professional and operational principles. Even if he suffered internally from a certain amount of inner turmoil, with perhaps one minor exception he always displayed an outward calm. This capability is a mark of a great leader; it enabled him to think clearly and instill confidence in his troops. For example, von Richthofen moved his headquarters 18 times from June to December 1941 while five of his Gruppen advanced 375 miles during the first three weeks alone: it is easy to forget the tremendous strain this places on support and staff organizations.[577] Of course, when the situation required abrupt action he was not afraid to step on toes.

In fact, von Richthofen could be utterly heartless if he saw the need. For example, in spring 1940 while von Richthofen was commander of *Fliegerkorps* VIII, three of his young airmen returned late after a night of carousing. When an army officer stopped them and laboriously checked their IDs they grew impatient. Anxious to return before the call for lights out they foolishly snatched their IDs back and ran to the barracks. According to Göring, von Richthofen promptly turned the three airmen over to army commander Walther von Reichenau, who ordered a firing squad to put them all to death for mutinous behavior. Göring reprimanded both generals and Wolfram in particular, "You, Richthofen, deserted three airmen in their hour of need."[578] Although Göring was a sycophant and liar this would not have been entirely out of character for von Richthofen; he could be ruthless.

As an air commander, von Richthofen understood the operational-level impact the principles of mass and concentration brought to airpower and he continuously fought to preserve them. Although his aircraft worked closely with the army, he never blindly submitted to their will as he honestly felt ground commanders did not understand airpower. Given the chance, he decided the army would fritter away his forces in minor attacks that would never combine to yield anything other than purely tactical results. Ground commanders were not the only problem; von Richthofen often had to fight within his own chain of command. For example, Kesselring said, "I instructed my air force and

[577] Hooten, *Eagle in Flames*, 99.
[578] David Irving, *Goering: A Biography* (New York, NY: William Morrow and Company, 1989), 283.

flak generals to consider the wishes of the Army as my orders."[579] Von Richthofen vehemently disagreed, saying "the *Luftwaffe* is not a whore who performs according to the wishes of the army, nor a fire brigade which immediately puts out every fire, large or small, on the ground front."[580] Although somewhat crass, this comment accurately describes an air commander more concerned with results than frivolity.

[579] Macksey, *Kesselring*, 89.
[580] Muller, *The German Air War in Russia*, 22.

Chapter 4

Comparative Analysis and Recommendations

This chapter will analyze the information presented in the previous two in order to determine some of the salient reasons why Lieutenant General Quesada and *Generalfeldmarschall* von Richthofen excelled as tactical air commanders. It will analyze both external and internal factors while comparing Quesada and von Richthofen throughout. Any correlations between the two generals add weight to any findings, bearing in mind that this study only considers two generals; a later study including additional leaders would either further solidify or perhaps invalidate any conclusions drawn here. Finally, this chapter will make recommendations to the services regarding results that prove relevant to those who select, develop, and promote officers.

External Factors

This section will investigate external factors to see what role they played in preparing Quesada and von Richthofen for the challenges they later faced as commanders. This approach gives voice to the argument that environment is *a*, if not *the*, major consideration in determining an individual's potential for success. For example, does a stable family and parental support during childhood tend to make a better officer than would a broken home? This section will look at both officers' personal backgrounds, professional military education, early assignments, and command experience to determine if these external factors substantially influenced either's success.

Pete Quesada's personal background appears to have had a positive effect on his professional development. His family was devoutly Catholic and Quesada embraced his religious upbringing; his faith grounded him and provided support throughout his life. Although his parents later divorced, Quesada maintained a good relationship with both. He thought highly of his father, visiting him in Spain when he could, and was exceptionally close to his mother, writing her throughout the war. He was extremely athletic and played many sports; he was the quarterback for several football teams. His

decision to join the military was personal and he was the first to do so in his immediate family. His father was a successful banker and his family was well off, making money a less important consideration; when Quesada initially entered the military it was almost as a lark. Although many successful military officers come from a family with a tradition of military service, this was certainly not the case for Quesada; he joined on his terms and without preconceptions.

If Quesada enjoyed a relatively stable and supportive childhood, Wolfram von Richthofen took this to another class--literally. Hailing from affluent nobility with over 350 years of history in the true Prussian tradition, von Richthofen was clearly one of the privileged few. He spent most of his childhood outdoors playing, riding, and hunting. His parents raised him as one would expect of nobles, but they did have one significant break with tradition. Although Wolfram attended the admittedly excellent German public schools, afterwards his parents did not send him to a military academy. Although this was the Prussian tradition due to its associated social status, Wolfram attended *Gymnasium* instead and his parents encouraged him to choose whatever career he wished.

When comparing the upbringing of Quesada and von Richthofen, four commonalities are apparent. First, they both had the benefit of a solid upbringing. Although the nobility undoubtedly had higher living standards, they were both free from want. More importantly, their parents sufficiently nurtured them and none bore ill-will; a broken home does not offer a congenial environment for raising a child.

Second, they were both athletic. Quesada was well-known for his exploits as a quarterback and von Richthofen kept his riding habits well into adulthood. An athletic foundation, while not a singularly important attribute, contributes to a general stamina that both of these men drew on throughout their careers. They were tireless commanders even in the darkest of times. This is even more impressive in von Richthofen's case considering he fought tuberculosis and died of a brain tumor shortly after the war ended.

Third, both of these men entered the military on their own terms. If this factor could be isolated from all others, it would almost surely indicate a more motivated officer than one who is forced to serve. It is likely that the US military enjoys a high caliber force at least partly because they are volunteers; it is unlikely that conscripts would be as motivated to succeed

Fourth and finally, neither Quesada nor von Richthofen needed the financial security of a steady paycheck; they both could afford to take career risks that many others could not. Apparently unconcerned with money, Quesada occasionally cut through red tape by spending personal funds to acquire new technology for the Normandy invasion. Von Richthofen was clearly well-off as a noble and even inherited his uncle's substantial estate during the war. In addition, Hitler routinely bribed senior officers with the rank of *Generaloberst* and *Generalfeldmarschall;* in addition to a monthly stipend, he paid them "tax-exempt checks of 250,000 reichsmarks [sic] for milestone birthdays."[581] Whether or not von Richtofen ever received such payments is uncertain as one did not discuss such things polite company. However, it is apparent that money was not a motivating factor for von Richtofen.

The early lives of Quesada and von Richthofen further influenced their approach to Professional Military Education (PME). Indeed, few if any would claim everyone has the same experience during, and gains the same knowledge from, PME. This paper takes the opposite stance: Quesada and von Richthofen had non-standard experiences compared to the average PME student and this granted them both a unique perspective on airpower, which they maintained throughout their careers.

Quesada approached ACTS, then CGSS, from 1935 to 1936, already with a critical eye towards service-centric doctrine and parochialism. He was from a purely civilian family and did not attend a service academy. Although clearly enjoying flying from the start, when it came to airpower employment, Quesada's mind was a clean state. He was twenty-one years old when the Air Corps had its first opportunity to indoctrinate him: by then Quesada had already developed some of his own ideas on airpower.

Spending time as a flying aide allowed Quesada to see the larger picture but kept him fairly isolated from operational units. Pilots in a dedicated squadron, especially when they are young, tend to adopt the thinking of their peers and commanders. Quesada, on the other hand, concentrated mostly on flying and although he spent time with many high ranking officials, he did not spend an excessive amount of time with any of them. Not only did Quesada avoid overexposure to Air Corps-centric ideas, but his

[581] Norman Goda, "Black Marks: Hitler's Bribery of His Senior Officers During World War II," in *Corrupt Histories,* ed. Emmanuel Kreike and William C. Jordan (Rochester, NY: Boydell & Brewer, 2004), 96.

diverse background also gave him a greater appreciation for the Army. In addition, his time with Marshall had a significant impact on his thinking. At a time when fellow pilots like Spaatz were complaining about how the Air Corps was not getting the attention and funding it deserved, Quesada was observing the effects of the interwar years on the Army. In Quesada's view, the army was suffering just as much, if not more, than the Air Corps under Roosevelt's New Deal.

Viewed in this light, Quesada's experience at PME did not push him one way or the other; it simply exposed him to several ideas and allowed him to choose for himself. The fact that most of his classmates wrote their papers on bombardment theory, while Quesada focused on the increasing turmoil in Europe, is an indicator of how he differed from his colleagues. Although Quesada admits he did not get into any debates over it, he had already made up his mind that strategic bombing was overemphasized.

His viewpoint did not change when he attended CGSS. In fact, CGSS gave him the opportunity to bounce his fledgling ideas regarding air-ground cooperation off his classmates. At a time when the services were fighting desperately over diminished funding, Quesada did not personally adopt this competitive mindset. Instead of spending all of his off-duty time with fellow pilots, he instead sought out Army officers such as Maurice Rose. It is interesting, if not prescient, that Quesada spent time with Rose solving a tactical problem for which the future IX TAC commander would become famous: providing close air support to an armored column that had separated from its main body.

When von Richthofen attended the equivalent of PME, Germany had not yet openly defied the Versailles Treaty, although it was rapidly building its military capability under the not entirely convincing guise of civilian aviation. In 1923, *Generaloberst* Hans von Seeckt accepted von Richthofen's request to leave civilian life and rejoin the growing German military as a general staff officer. The next six years were the closest equivalent to PME for von Richthofen; as a staff officer at the Reichswehr Berlin headquarters, he continued his education at the Technical University of Berlin. Although technically a civilian university, it often provided cover for military research.

Von Richthofen had an affinity for mechanical toys in childhood and this tendency grew throughout his years in the military. Although he had little overlap with his cousin Manfred, von Richthofen almost certainly learned of his exploits from his cousin Lothar. Not only was Manfred a legendary ace, but he was heavily involved with aircraft design; this may additionally have influenced von Richthofen as it was his chosen area of study during graduate school.

Von Richthofen's dissertation, "The Influence of Aircraft Production Methods and Contrasting Model Types with References to Production of Military Aircraft," demonstrated his typically German quest for efficiency. More important, von Richthofen knew that if Germany went to war it needed the ability to mass produce aircraft quickly. Aircraft acquisition is in essence a strategic issue, as the type and number of aircraft a country possesses determines what it can accomplish politically. For example, a country with thousands of advanced long range bombers can consider strategies unthinkable with short-range fabric aircraft.

Von Richthofen recognized that, in the purported words of Lenin, "Quantity has a quality all its own."[582] It is highly likely that the experience he gained in developing his dissertation gave von Richthofen the confidence that his ideas on mass production of aircraft were correct. As a general staff officer working in the Technical Office, von Richthofen accepted a certain amount of personal risk when he authorized the mass production of interim fighters. Although these aircraft were soon obsolete, his tasking both stimulated the aircraft industry and prepared it for the mass-production of aircraft that Germany would soon demand. Von Richthofen correctly determined it was more important in war to mass-produce mediocre aircraft than meticulously build small quantities of somewhat better ones by hand.

Although von Richthofen did not study airpower theory in formal military schools such as ACTS and CGSS, he no doubt learned much from his senior officers. In 1935, Generalleutnant Walter Wever wrote *Luftwaffe* Regulation 16, *The Conduct of the Aerial War*. His regulation was the mainstay of Germany's air doctrine and von Richthofen

[582] James Dunnigan, *How to Make War: A Comprehensive Guide to Modern Warfare for the Post-Cold War Era* (New York, NY: Morrow, 1993), 506.

certainly embraced it; his priorities during the early wars in Spain and Poland are evidence that he not only understood it, but also was an expert in employing it.

It appears, therefore, that both Quesada and von Richthofen gained important yet different lessons from PME. The strategic bombardment theory taught at ACTS failed to indoctrinate Quesada. More important, when he graduated from CGSS he already had some ideas on air-ground cooperation that he would continue to develop as a commander. Although von Richthofen did not attend an official PME, his Ph.D. in engineering, sponsored by the military, was an ample substitute. He used this time to develop his fascination with mechanics into a working theory on aircraft mass production. Von Richthofen likely absorbed airpower doctrine and theory from publications such as Regulation 16; his ability to hit the ground running in the Condor Legion offers sufficient proof that he clearly understood tactical airpower employment. For both men, PME had a positive although not necessarily predictable effect on their understanding of airpower's potential.

Just as their PME took different forms, the character of Quesada's and von Richthofen's early operational experiences also stand in contrast. However, there is one crucial commonality: They both had the opportunity to practice in a somewhat benign combat environment compared to the historical significance of their later commands. This section will begin with their first military assignments and end with their first command tours.

Quesada's early assignments differed not only from von Richthofen's, but also from those of his fellow Air Corps pilots. From 1927 until 1939, Quesada spent the majority of his first twelve years as flying aide for some of the more famous men in the annals of US history: Chief of the Air Corps Major General James Fechet, US Ambassador to Cuba Harry Guggenheim, Assistant Secretary of War for Air Trubee Davison, then Commandant of the Infantry School Colonel George C. Marshall, and General Headquarters Air Force Commander Major General Frank Andrews. As a brand new major, Quesada worked directly for Major General Henry "Hap" Arnold as head of the Foreign Liaison. Although this was not another flying aide assignment, the two men spent much time together touring Europe.

The uncommonly high visibility this environment provided Quesada may seem to be pure luck, but he was in fact a young officer "in demand" for both his staff and flying skills. More than that, however it offered him a rare gift that he took full advantage of: opportunity. One assignment did lead to another, but Quesada had to prove himself along the way or his good fortune would have eventually come to an early. And prove himself he did. From his part in the Bremen rescue, the flight of the Question Mark, the B-10 pick-up game during the mail delivery trials, to all of the senior officers that personally commented on his character and expertise, Quesada repeatedly proved himself worthy of greater responsibility.

The one thing that Quesada lacked, however, was command experience. In July 1941, he took command of the Thirty-third Fighter Group at Mitchel Field. By this time he had endeared himself to enough major players that they ensured Quesada had an environment where he could develop his command abilities. This is important, as it turned out Quesada did indeed need both the mentoring and the top cover they provided. For example, when Brigadier General Sanderford Jarman of the Coast Artillery threatened Quesada with a court-martial over the latter's violation of command protocols, Marshall himself intervened to defuse the situation.

When Quesada pinned on brigadier general and went to North Africa, Northwest African Air Forces, Commander Major General Tooey Spaatz knew the young general still needed seasoning. By placing him under the reluctant NACAF Commander Air Vice Marshal Hugh Lloyd, Spaatz not only placed Quesada in an environment where he could blossom under a much-needed mentor, but he also probably saved his career. Between his bouts of arrogance and occasional breaches of command, Quesada would have quickly put off a superior with less patience. As it happened, Quesada did greatly mature during his time in North Africa and soon grew into a potent commander. Spaatz ensured he had the opportunity to gain greater responsibility in the largest operation in US history: the D-Day invasion of Normandy.

Since von Richthofen was nine years older than Quesada, his operational experience began during World War I. Von Richthofen did not start in aviation, but rather as a cavalry officer. At the time, the cavalry was highly respected and the military's primary maneuver arm. Furthermore, von Richthofen's childhood

environment likely influenced his decision to enter the cavalry since he enjoyed hunting and riding horses during his youth. Von Richthofen maintained his affinity for horses and even used them to hunt near active combat zones throughout World War II.

As trench warfare set in during World War I, however, cavalry quickly proved useless against machine guns. As von Richthofen sent his horses to the rear and took up position in the trenches alongside the infantry, he realized cavalry was a dead-end career: both figuratively and literally. Instead of resigning himself to this fate as many others did, von Richthofen resolved to leave the cavalry and join the *Luftstreitkräfte*.

Although his cousin Manfred was commander of the legendary *Jasta* 11, von Richthofen had to earn his transfer from the cavalry to the *Luftstreitkräfte* just like anybody else. He also competed for favorable assignments during training along with the other pilots. In accordance with Prussian tradition, noble status did not curry favor. Von Richthofen performed exceedingly well during flying training and his instructors regularly commented on his superb performance. If those observations left any questions his expertise unanswered, von Richthofen's eight kills put them to rest. In the course of a single war, von Richthofen performed exceedingly well in two different services; this is a rare and honorable accomplishment.

Yet von Richthofen was just getting started. Much like he fought his way into the *Luftstreitkräfte*, von Richthofen continued to shape the environment to his benefit. Through family contacts, he successfully lobbied von Seeckt to bring him back into active military service in 1920. As a new general staff officer, von Richthofen quickly set to work doing his part to build the *Luftwaffe*. After earning his Ph.D. in engineering in 1929, von Richthofen spent the next four years in typical general staff billets. Although these assignments did not hold any special significance, von Richthofen was present while Germany developed its maneuver warfare tactics. Most notable was his time as commander of a motorized troop company, where he realized robust radio communication was crucial to the proper sequencing of maneuvers. Von Richthofen would later spend much of his career honing communications between air and ground forces.

In 1934, Major von Richthofen became branch chief of the Aircraft Development Office. Now in his element, von Richthofen confidently issued "development

guidelines," which argued for placing mediocre bombers such as the Do 11 into full production in order to train the industry to mass produce aircraft. In this instance, along with many others, it appears von Richthofen acted on his own volition when he saw what in his view was in Germany's best interest. In this way, he was shaping the future wartime environment for Germany's benefit.

Von Richthofen was already making a name for himself when Germany decided to send support to the Nationalists during the Spanish Civil War. *General der Flieger* Helmuth Wilberg, Chief of the Spanish operation, had known von Richthofen since the 1920s. Considering him a capable officer, Wilberg invited von Richthofen to Spain in late 1936. This was a significant turning point in von Richthofen's career; he was already well-known as an air ace, but during the next three years, he would transform from an established tactical expert and competent general staff officer into a true German hero.

The Spanish Civil War provided a unique environment where von Richthofen, along with the entire Condor Legion, could develop Blitzkrieg tactics at relatively little cost: at least in the sense that Germany's national survival was not at stake. Von Richthofen took full advantage of this opportunity to practice doctrine and develop tactics, first as Condor Legion chief of staff and by October 1938 as *Generalleutnant* von Richthofen, Commander of the Condor Legion. He was at times ruthless in his relentless drive to perfect air-ground cooperation. Not only did he improve communications between his pilots and ground commanders through technological and operational improvements, but he also understood how to coordinate the execution of mechanized warfare in order to exploit the shock effect airpower created.

Von Richthofen also developed his diplomatic skills, not only on an individual level, but also as they related to coalition politics. For example, after gaining a tactical victory against Madrid at the end of the war, von Richthofen held his troops at bay and allowed the Nationalists to storm the city and claim the subsequent political victory. These skills would serve him well when working with Axis allies in Russia and Italy later in the war.

Furthermore, on occasions when von Richthofen determined that his career progression had reached its limits, he actively pursued alternatives where he could flourish. Although this was most apparent in his transfer to the *Luftstreitkräfte* and return

to active service, von Richthofen had no problem making his desires known. The important point is that when he gained a position, he excelled beyond almost any realistic standard.

When comparing Quesada and von Richthofen's early assignments, on the surface there appears to be a relative difference. Quesada seemed unusually lucky during his early assignments: he often appeared to be in the right place at the right time. As a young officer, he either was a flying aide or worked closely with some of the most famous men in air force and U.S. history. Quesada's early assignments are not attributable to nepotism, as he did not come from a military family. Although he soon gained important benefactors such as Marshall, Spaatz, and Arnold, he earned these through his own exceptional performance. Nonetheless, he volunteered for every assignment possible, especially the flying ones. When he excelled at each, his commanders kept moving him from one outstanding job to the next.

Von Richthofen, on the other hand, made his own good fortune during his early assignments. When he determined cavalry as a maneuver force was obsolete, he took it upon himself to work a transfer to the *Luftstreitkräfte*. As a civilian during the interwar years, von Richthofen used his extensive family connections in order to get back on active military duty. He grew up as a noble in the deepest of Prussian tradition; unlike Quesada, it is likely von Richthofen's heritage charged him with a need to fulfill his destiny.

Therefore, this apparent difference in how each man obtained his early operational assignments is not significant. Most important, they succeeded in whatever position they held and therefore ensured their next assignment would command more responsibility. Quesada, spending as much time flying as possible, was an excellent pilot and did all that was asked of him. Von Richthofen similarly excelled; he was an ace in the Great War, helped build the Luftwaffe, and performed exceptionally as commander of the Condor Legion.

In summary, when comparing external factors between the two men three commonalities are readily apparent. First, they both came from relatively stable and nurturing homes that provided them with ample support. This leads to the second point: their parents appear not to have influenced the two young men's career choices, and both

chose a military life for themselves. Third and finally, both men had the opportunity to grow professionally in a relatively permissive environment: Quesada had North Africa and von Richthofen had the Condor Legion during the Spanish Civil War. Although the term "permissive" is relative as they were both war zones, their respective countries recognized that the stakes were not yet as high as they would become in Russia and Normandy. The US entered World War II in North Africa because it realized it was not yet ready to invade France and Germany likewise had limited interests in Spain, largely using the civil war as an opportunity to try out its new doctrine of maneuver warfare. The only significant difference between these men was in how they obtained their first assignments. Quesada seemed to benefit from ample luck initially whereas von Richthofen seems to have made his own.

Although environmental factors may have helped the men along at various times through their early careers, they do not sufficiently account for their later successes. For example, both men performed well beyond any reasonable expectation in the various positions they held: this was a growing factor in their upward mobility. Since the evidence for external factors such as family upbringing, career choice, and personal drive cannot adequately explain the success of either man beyond his early assignments, this portion of the analysis ends here.

Internal Factors

This section will attempt to crevasse address questions unanswered in the previous section. As fortunate as they both were, Quesada and von Richthofen succeeded for reasons that external factors alone can never sufficiently explain. Although good fortune occasionally provided the conditions for success, both men were unique in their ability to seize these opportunities and maximize their potential. More important, if their current circumstances precluded success, they would generate new ones that would.

Clausewitz's chapter "On Military Genius" provides timeless criteria that this section will employ in dissecting Quesada and von Richthofen. He describes a military genius as one who possesses the:

> gifts of mind and temperament that in combination bear on military activity. These, taken together, constitute *the essence of military genius*.

> We have said *in combination*, since it is precisely the essence of military genius that it does not consist in a single appropriate gift-courage, for example-while other qualities of mind or temperament are wanting or are not suited to war. Genius consists *in a harmonious combination of elements,* in which one or the other ability may predominate, but none may be in conflict with the rest.[583]

Before beginning this analysis, it is first important to assuage the fears of those intimately familiar with the works of Clausewitz; this paper does not claim that these men qualify as geniuses under his strict definition. Clausewitz plainly reserves "the name of 'genius' for those who have excelled in the highest positions--as commanders-in-chief—since here the demands for intellectual and moral powers are vastly greater."[584] Therefore, as neither Quesada nor von Richthofen was a supreme commander, they are ineligible to compete for this ultimate prize. Although this criterion may appear arbitrary on the surface, it does follow that added responsibility, in this case the ultimate responsibility for the destiny of a nation, should qualify the recipient for the greatest of prizes. This claim will remain unchallenged here.

The criteria that Clausewitz uses to describe military genius, however, are particularly useful in explaining the success of Quesada and von Richthofen. Instead of throwing out the military genius criterion on a technicality, this section will demonstrate how both men satisfied all of Clausewitz's criteria for which they were eligible to compete. According to Clausewitz, the military genius "derives most of his vigorous support…from that blend of brains and temperament which we have learned to recognize in the qualities of *determination, firmness, staunchness*, and *strength of character* (italics added)." Quesada and von Richthofen possessed each of these qualities in spades.

Along with demonstrating that Quesada and von Richthofen satisfied the first criterion, determination, it is also necessary to show they met two preconditions that give the word its meaning. Clausewitz describes the first precondition when defining determination:

> War is the realm of chance. If the mind is to emerge unscathed from this relentless struggle with the unforeseen, two qualities are indispensible:

---

[583] Carl von Clausewitz, *On War,* ed. and trans. by Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 100.
[584] Clausewitz, *On War,* 111.

> *first, an intellect that, even in the darkest hour, retains some glimmerings of the inner light which leads to truth; and second, the courage to follow this light wherever it may lead.* The first of these qualities is described by the French term *coup d'oeil;* the second is *determination*.[585]

In other words, Quesada and von Richthofen must first possess *coup d'oeil* before they can qualify as determined, at least under the definition of military genius that Clausewitz describes. *Coup d'oeil,* French for glimpse or literally "stroke of the eye," refers to the "idea of a rapid and accurate decision," particularly important "in the days when the cavalry attack was the decisive factor."[586] Although these decisions applied "to visual estimates only," the expression has since expanded to mean "the quick recognition of a truth that the mind would ordinarily miss or would perceive only after long study and reflection."[587]

The second precondition, imagination, also "involves merely the intellect" and "is not related to temperament."[588] Clausewitz describes this "*mental gift,*" which is "*decisive in the highest degree,*" as "the faculty of *quickly and accurately grasping the topography of any area* which enables a man to find his way about at any time."[589] Imagination is actually a precondition to *coup d'oeil,* as outstanding commanders must be able to visualize the topography of an operational area, both literally and figuratively, before deciding the proper course of action. Furthermore, war in the third dimension made this both easier and more difficult given the inherent complexities involved in combined-arms warfare.

These two preconditions are not enough to make a great commander, however, as he must also possess the determination necessary to carry his ideas out. Many commanders develop outstanding ideas yet lack "the courage to accept responsibility, courage in the face of moral danger. Looked at in this way, the role of determination is to limit the agonies of doubt and the perils of hesitation when the motives for action are inadequate. Determination, which dispels doubt, it a quality that can be aroused only by the intellect, and…proceeds from a special type of mind, from a strong rather than a

---

[585] Clausewitz, *On War,* 102.
[586] Clausewitz, *On War,* 102.
[587] Clausewitz, *On War,* 102.
[588] Clausewitz, *On War,* 109.
[589] Clausewitz, *On War,* 109.

brilliant one."[590] Determination is most important when the risks are greatest as the pay-offs are just as substantial; this is often the case in a rapidly-changing battlefield. Furthermore, Clausewitz explains determination "in a single instance is an expression of courage; if it becomes characteristic, a mental habit."[591] This section will therefore simultaneously show that both men possessed ample imagination, *coup d'oeil*, and determination.

As IX TAC Commander, Quesada demonstrated all three qualities, both when a single situation called for it and as a matter of routine. Three illustrative examples are how Quesada solved the communications breakdown during the D-Day invasion, his proven ability to provide outstanding air support to the rapid armored advances during operations and France, and his ability to innovate solutions rapidly under combat conditions. Quesada used his imagination to visual the battlefield, *coup d'oeil* to arrive at the proper solution quickly, and determination necessary to carry it his ideas. His actions in both of these cases, although not independently decisive, were vital to Allied success.

During the D-Day invasion, Quesada quickly realized that Uxbridge was completely overwhelmed with close support requests. Its radar operators, controllers, and generals struggled to make sense of the confusion, but the situation was devolving towards paralysis. Rather than succumb to the confusion as many others did, Quesada extricated himself from the chaos and took bold and decisive action to remedy the situation.

Although Quesada was intimately involved with his IX TAC preparations for the invasion, he also fully understood the overall invasion plan. This in itself is not unique. What makes Quesada stand out was his ability, in spite of the fog and friction during the invasion, to maintain a sufficiently accurate mental picture overall; he therefore possessed ample imagination. Consequently, Quesada was able to find the proper solution, as history has demonstrated.

In addition, his ability to look inward and rapidly decide it necessary to redirect all fighter control from Uxbridge to the smaller and more efficient center at Middle Wallop demonstrates Quesada's *coup d'oeil*. Finally, he did not waver in carrying out

[590] Clausewitz, *On War,* 102-103.
[591] Clausewitz, *On War,* 102.

this action and although he technically sought permission from Brereton to move operations, it is apparent Quesada possessed ample moral courage as well. Although a risky move, Quesada's decision was right on target and his control of fighter operations dramatically improved after the move. It is important to remember that D-Day was the most massive Allied operation to date and at the time there was significant concern as to how the operation would end. If Quesada had been wrong, he would have crippled communications with IX TAC fighters with lethal consequences for the desperate soldiers on Omaha Beach. Quesada's quick thinking and bold action clearly helped to save the day.

Quesada further demonstrated his imagination, *coup d'oeil,* and determination during sustained operations such as COBRA and the subsequent drive through France. Without considerable air support from IX TAC, Allied tank columns would not have enjoyed the operational maneuver advantages they did. Although it is unlikely the battered German forces could have turned the tide in any case, any significant delay introduces a level of uncertainty that can yield unpredictable consequences. In any case, Quesada's outstanding support of armored forces during one of the most pivotal operations in France set a standard for close air support operations that reverberates today.

Quesada realized that imagination is important, although insufficient on its own, for maintaining adequate battlefield situational awareness. He had an insatiable thirst for intelligence and was no arm-chair general; a great commander cannot maintain total awareness of the battle from behind his desk. Quesada therefore demanded his intelligence officers get as close to the fight as possible to disseminate the latest information. If they failed, Quesada at times would show his displeasure by taking matters into his own hands. The incident where a Tiger blew up his jeep on 1 August 1944, as he personally attempted to gain the latest information from the front, offers a case where Quesada took this to the extreme. More typical, he regularly flew over the battlefield and was always out among the troops; he quickly realized field reports are a distant second to personal experience. In the case of COBRA Quesada slept a hedgerow away from Bradley partly to ensure he had the latest picture directly from the ground

commander. Quesada maintained an excellent picture of the ground situation through his imagination, boundless energy, and, on occasion, his iron will.

When Collins exploited the weakened German lines and began his historic armored thrust, IX TAC was immediately involved. Due to Quesada's foresight, IX TAC staff officers worked alongside their army counterparts and were often aware of the ground commander's next move at the same time. As the armored forces barreled through German forces along the French countryside, Quesada's aircraft ensured their path was clear. As the thrust turned into a near-rout, IX TAC along with ground forces struggled to keep their logistical lines intact. Quesada rapidly made on-the-fly operational and basing decisions in order to keep up with the armored columns. This required no small amount of moral courage and determination, since a bad decision could mean no air support. Without IX TAC, Collins' advance almost certainly would have come to a grinding halt.

Third, Quesada's technological innovations further demonstrate a measure of *coup d'oeil*. During the temporary stalemate between D-Day and the COBRA breakout, commanders were emotionally struggling with interservice friction such as the double-edge fratricide incidents. Quesada did not succumb to self-doubt as many likely did during these dark times; he instead looked inward and followed his inner light wherever it led him. The result of his *coup d'oeil* seems simple in retrospect: He placed a radio and a pilot in the leading tanks of armored columns.

This solution, which is the basis for JTACs today, sounds so simple and obvious in retrospect that it is easy to overlook its genius. At the time, there were substantial friction and jealously between the Army and USAAF at the time. Furthermore, pilots were no doubt reluctant to trade their flying scarves for a radio in a tank. When initially installing the radios, Quesada's depot turned away Bradley's Sherman tanks, not once, but twice; this is indicative of the level of interservice friction. In part because the necessary radio technology was relatively new, before Quesada hit upon the idea it had simply not occurred to anyone else in a senior command position. Service-centric thinking is a substantial and continual impediment to this kind of innovation and should not be underestimated. Regardless, Quesada both followed the "*light which leads to truth"* and demonstrated the "*courage to follow this light;"* the result was the air-tank

team. This development reduced fratricide in the air and on the ground, shortened the time-to-kill chain, and allowed ground crews to talk pilots onto targets they would not otherwise see from the air; there are few other innovations that have enjoyed a similar comprehensive impact.

Like Quesada, von Richthofen possessed substantial quantities of imagination, *coup d'oeil*, and determination. Two examples sufficiently demonstrate these qualities: his exceptional logistical management while supporting operational ground maneuvers and his on-the-fly technical innovations. His ability to see, understand, and solve problems before they reached catastrophic proportions enabled Germany to attain operational successes it may not have under a less competent commander's watch.

One of the most difficult problems the *Luftwaffe* faced when supporting *Blitzkrieg* operations was its unquenchable thirst for supplies. In fact, in many cases rapid ground maneuver forces halted their advance due to the overextension of their own supply lines, not robust enemy resistance. Once they reached their culminating point at the end of an inadequate supply tether, these forces were no longer on the offensive and the timetable for success became inconclusive. For example, this is exactly how German forces found themselves wholly unprepared for harsh Russian winters. Without intending or realizing it, the Germans found their war of annihilation had switched to one of attrition; under such conditions, they could never hope to outlast the Soviets. Von Richthofen had the uncommon ability expertly to manage his supply lines, thus often staving off and occasionally altogether avoiding this kind of disaster.

Beginning with German *Blitzkrieg* operations in Poland, von Richthofen regularly used his imagination to see a communication or logistical problem before it became an issue. His experience with the Condor Legion certainly helped, but von Richthofen also possessed the ability to develop a mental picture of the battlefield and the demands a rapidly maneuvering German ground force would make on his Special Purposes Division. Although he took command a mere month before the invasion began, von Richthofen immediately identified thinness in communication lines that other commanders failed to anticipate. Although he had little time, von Richthofen set his best communications technicians against the problem and did everything he could to correct it before the war began. In sum, von Richthofen could visualize the future battlefield in his mind and

identify a potential problem when others who had more time to plan the operation could not; this demands a considerable imagination.

Already having an accurate mental picture of the battlefield, von Richthofen demonstrated substantial *coup d'oeil* in solving these daunting logistical problems. He repeatedly identified, analyzed, and implemented solutions to the winding logistical lines and leapfrogging of airfields. Since von Richthofen's aircraft had relatively short ranges they had to reposition at airfields along the line of advance. Unfortunately, the Polish stored little POL at their airfields and both sides destroyed what was available within the first few days of the war.

Ironically, German ground forces seemed to outmaneuver both the Polish and their own logistical lines with equal efficiency, further adding to the problem. Ground forces not only required considerable kinetic air support from the *Luftwaffe*, but they also started requesting resupply by air. This added to the logistical nightmare von Richthofen was already dealing with and could easily have overwhelmed a weaker mind. True to form, von Richthofen masterfully analyzed the situation and took appropriate action.

Having gained air superiority in the first few days, von Richthofen correctly assumed the normally unacceptable risk of flying his short-range and vulnerable Ju 52 transport aircraft, laden with fuel, to advanced airfields. Commanders such as General von Reichenau of the Tenth Army lavished von Richthofen with praise, which attests to the latter's ability to maintain robust air operations within close proximity to ground forces regardless of the logistical strain. Throughout the invasion of Poland, von Richthofen aggressively maintained his mental picture of the both the battlefield and its logistics, developed innovative working solutions, and possessed the determination necessary to carry them out. The example of 4 September 1939, when von Richthofen watched the battlefield from his Fieseler Stork, landed at the front lines, talked to the ground commander and solved a ground logistic problem with airpower on the spot encapsulates the Clausewitz's criteria of *coup d'oeil* and determination.

Von Richthofen further demonstrated this gift during the invasion of France and directly contributed to the tremendous Allied embarrassment at Dunkirk. When von Kleist was considering an armored drive to the Channel in a sweeping maneuver that could ultimately trap thousands of Britain's best soldiers, German high command was

very worried about the infantry's inability to keep up with the Panzers and provide sufficient flank support. Von Richthofen immediately had a flash of insight: His *Fliegerkorps* VIII could leapfrog airfields and provide flank support to von Kleist, eliminating the need for infantry altogether. This was a highly controversial move at the time, but von Richthofen followed his *coup d'oeil* and convinced Göring to support the idea. In addition, this request took substantial moral courage on von Richthofen's part; if his forces were unable to support von Kleist it would have likely meant his job.

Under von Richthofen's leadership, *Fliegerkorps* VIII performed brilliantly. Von Richthofen maintained his headquarters directly next to von Kleist's, ensuring close coordination and a timely picture of the battlefield. His aircraft provided highly effective flank support to XIX *Panzerkorps* all the way to the English Channel. In several instances both enemy air and ground forces along with the omnipresent fog and friction of war threatened to slow XIX *Panzerkorps'* advance, but von Richthofen always found a workable solution in time. Whether seizing Allied airfields, scavenging fuel and supplies, using Ju 52s to fly supplies forward, or combining nearby airfields into groups in order to increase efficiency, von Richthofen remained one step ahead of his problems.

The Soviet campaigns, at least initially, were little different and von Richthofen's management of communication and logistical lines in previous commands made *Fliegerkorps* VIII among the best air corps in the *Luftwaffe*. It also ensured von Richthofen was present wherever the shifting point of main effort was, from Moscow to Leningrad, back to Moscow, then the Caucasus. The fact that the German high command and often Hitler himself moved *Fliegerkorps* VIII speaks highly of von Richthofen's reputation and performance. Even more impressive is how von Richthofen dealt with the additional toll the rapidly changing main objective took on his logistics; somehow, he was always able to reposition his forces in time to fly effective sorties days later.

Von Richthofen's incredible ability to support Tenth Army in Poland, von Kleist in France, and numerous operations in the Soviet Union not only offers ample evidence of his imagination, *coup d'oeil*, and determination, but also raises an interesting question: what if he did not possess adequate amounts of these Clausewitzian qualities? Although admittedly counterfactual, what if von Richthofen failed to manage his logistics properly and could not keep up with von Kleist? A successful strike at XIX *Panzerkorps*' flank

could have stopped the race for the Channel dead in its tracks. Even if it merely slowed, it could have prevented the Allied embarrassment at Dunkirk with unpredictable effects on the war.

Without proper airpower to support it, *Blitzkrieg* has limited utility. One is left asking whether von Richthofen's amazing ability to cobble together sufficient logistics masked a deeper understanding regarding *Blitzkrieg's* inherent limitations. Armed with this knowledge, the Germans may have viewed their operations in the Soviet Union with a more sober eye. Although beyond the scope of this paper, it is fair to question whether exceptional commanders such as von Richthofen, by supporting a virtual house of cards longer than they deserved, actually contributed to the downfall of Germany. If the Germans were less successful initially, perhaps they would have tailored their designs for world conquest. In any case, the answer to this rhetorical question would not reflect poorly on von Richthofen; the blame would instead rest squarely on the commander-in-chief, the *Führer* himself.

In addition to his logistical genius, while in command von Richthofen made several technical innovations that required both *coup d'oeil* and determination. First, in a flash of insight during the Spanish Civil War, von Richthofen made a connection between his 88mm artillery and enemy ground forces. By aiming one at the other, von Richthofen's innovation crossed service lines, using *Luftwaffe* equipment as a ground weapon. Although this application of flak seems obvious in retrospect, many *Luftwaffe* purists in Berlin recoiled in horror at what they considered an abomination. Admittedly far-fetched, some of these officers probably felt one might as well drive Stukas on the ground and fire at enemy soldiers as in the B-movie *Iron Eagle*. Despite protest to the contrary, von Richthofen's determination to continue using flak in this role saved both army and his own ground personnel on several occasions throughout the war.

Another innovation that highlights von Richthofen's *coup d'oeil* was his continual improvement of air-ground communications. Unencumbered by service-centric thinking, von Richthofen moved telephone sets onto forward-looking hills to improve air-ground communication during the Spanish Civil War. By the Soviet campaign, he had increased communications an order of magnitude by equipping the *Flivos'* armored cars with radios. Again, these innovations were largely due to von Richthofen's ability to look

inward, develop the correct solution regardless of service lines, and then implement it with confidence. It is difficult to find better examples of these Clausewitzian criteria.

Taken together, both Quesada and von Richthofen possessed ample quantities of imagination, *coup d'oeil*, and determination. They had an uncommon ability to develop an accurate mental picture of the battlefield, introspectively devise innovative solutions, and finally the moral courage to carry out the necessary action regardless of the risk of failure. Although it is easy to sit in a comfortable chair in the present and belittle the accomplishments of great men and their innovations as technological determinism, it is important to remember these men demonstrated Clausewitzian attributes during the fog and friction of a total war. After all, "Everything in war is very simple, but the simplest thing is difficult."[592]

Clausewitz's second criterion, firmness, is an intellectual habit that must stand the test of time. A man who possesses this attribute "sticks to his convictions, whether these derive from his opinions or someone else's, whether they represent principles, attitudes, sudden insights, or any other mental force. Such *firmness* cannot show itself, of course, if a man keeps changing his mind."[593] Both Quesada and von Richthofen displayed an understanding of and adherence to principles of tactical airpower that, aside from the incorporation of lessons learned, remained unshakeable throughout their entire careers.

Quesada laid his foundational understanding of tactical airpower during the early years of his career. His time as Marshall's flying aide gave him an initial appreciation for the army. During his PME at ACTS and CGSS, Quesada demonstrated a preference for tactical airpower while the more mainstream Air Corps officers maintained the party-line affinity for strategic bombing theory. As a young general Quesada saw how airpower improperly applied, as it was during Kasserine Pass, could have immediate and negative operational effects.

By the time he arrived in England, took command of IX ASC, and began preparing for the Normandy Invasion, Quesada was firm in his understanding of tactical airpower employment. Although he continually sought to improve airpower, his ideas

[592] Clausewitz, *On War,* 119.
[593] Clausewitz, *On War,* 107.

were "well thought-out, clear, and scarcely open to revision."[594] Quesada and his command were tremendously busy making preparation and he simply did not have time for pedants. He summarily dismissed staff officers who clung to strategic bombing theory and could not adapt. His firmness of mind enabled Quesada to focus on developing new bombing tactics, techniques, and technology that would make IX TAC highly effective during D-Day and beyond.

He resisted pressure from both inside and outside IX TAC. Many Allied generals senior to Quesada, such as Spaatz, Arnold, and Harris, pressured Quesada's command to yield forces to their campaign. Although at times he supported bomber commands and was highly effective, Quesada controlled the terms of engagement and did not allow the piecemeal dismemberment of his forces. In addition, he took every opportunity, such as when he gained permission to bomb the bridge at Vernon, to demonstrate the efficacy of fighters in an interdiction role. During OVERLORD, COBRA, and subsequent operations Quesada repeatedly held to his views on air support and directed his aircraft where they could have the greatest effect. Instead of frittering away his sorties, he concentrated them in whatever missions would yield the greatest benefit that day, from interdiction to direct and close support. In sum, Quesada's firmness of mind was crucial to his success as a tactical air commander.

Von Richthofen exhibited a similar firmness regarding airpower employment that began during his years as a junior officer. Von Richthofen gained an early appreciation for airpower as a cavalry officer during World War I. He noted the demise of cavalry as a maneuver force in the face of machine guns and modern artillery. Meanwhile, his cousin Manfred and his *Jasta* 11 seemed to operate on literally another plane and could avoid the ground fight altogether. Von Richthofen immediately saw the utility of airpower, transferred to the *Luftstreitkräfte,* and never once looked back.

Although he gained valuable experience and an appreciation for the technical aspects of aircraft during World War I, von Richthofen began laying his foundational understanding of airpower in 1923. While a general staff officer at the *Reichswehr* Berlin headquarters, he completed his engineering PhD at the Technical University in 1929. His classified dissertation on aircraft mass production techniques was a key indication that

[594] Clausewitz, *On War,* 107.

von Richthofen possessed an uncommon understanding of the vital underpinnings of airpower employment.

During this time, von Richthofen gained a unique appreciation for the principles of mass and concentration. Acquisition is an oft-overlooked, yet supreme element of strategy; the type of aircraft that a state chooses to make dictates their preferred method of air warfare. Von Richthofen's dissertation encouraged the aircraft industry to transition from small numbers of high-quality aircraft to mass production of less aesthetically-pleasing, yet effective, ones. At the time, this was a somewhat radical proposition, but states that could not adapt to mass production, such as Italy, were at a severe disadvantage during the war. Von Richthofen understood the Luftwaffe would need large numbers of aircraft that could concentrate on the main effort in order to achieve a desired objective.

As a staff officer in the Technical Office, von Richthofen stuck to these principles and issued development guidelines that pushed for the mass production of mediocre aircraft such as the Do 11 bomber. This and other aircraft would soon be obsolete, but von Richthofen was firm in his belief that the aircraft industry must learn to generate large numbers quickly. In addition, this move took substantial moral courage; if the attempt failed, it would have boded ill for the young officer's career. Fortunately, von Richthofen was correct and Germany transitioned to highly effective mass production techniques that it sustained throughout the war.

In 1936, when von Richthofen left the Technical Office to assist the Nationalists in the Spanish Civil War, he along with the rest of the Condor Legion had the opportunity to work the kinks out of German technology, doctrine, and tactics. Throughout his time in Spain, von Richthofen had the rare opportunity to solidify his views on airpower in a relatively benign environment. In the case of Guernica, he concentrated his airpower at the center of town in order to block the Republican retreat. Unfortunately, both von Richthofen's lack of concern over civilian deaths and the inability of sluggish Nationalist ground forces to exploit the attack's shock effect made Guernica the most infamous event of the war. Still, von Richthofen's massing of aircraft in a concentrated attack at the main effort was sound airpower employment.

When Germany invaded Poland in 1939 then France in 1940, von Richthofen was already a recognized master of tactical airpower and maintained steadfast to his principles. In both campaigns, he fended off requests from ground commanders who had a lesser understanding of airpower and what it could do. Somewhat understandably, these commanders were primarily concerned with the forces immediately in front of them. They often made air support requests, which were certainly important to the men at the front, but did not necessarily contribute to the operational objective.

If von Richthofen responded to all of these requests, he would have employed his forces piecemeal and to little overall effect. There simply were not enough aircraft to satisfy everybody. It took substantial firmness on von Richthofen's part to turn down these requests. By contrast, the Polish and French failed to concentrate their attacks, partly due to doctrinal issues, but also due to inferior forces; consequently they had little effect and German airpower brushed them aside as little more than a distraction.

During the Soviet Campaign, von Richthofen was once again firm in his understanding of tactical air employment. He ensured *Fliegerkorps* VIII concentrated their attacks on main Soviet forces in support of *Panzergruppe* 3, which was in the northern half of von Bock's Army Group Center drive on Moscow. Because of von Richthofen's excellent logistics and adherence to the principles of mass and concentration, these attacks were highly successful. Before Army Group Center reached Moscow, high command redirected von Richthofen to support Army Group North's encirclement of Leningrad. *Fliegerkorps* VIII's aggressive and concentrated attacks in support of German ground forces were instrumental in encircling all of Leningrad except for Lake Ladoga, which the Russians would use to resupply the besieged city until 1944. When Hitler again shifted the main effort south to Moscow, *Generalfeldmarschall* Ritter von Leeb, commander of Army Group North, was personally upset over the loss of von Richthofen's *Fliegerkorps* VIII; he had witnessed the efficacy of airpower when in the hands of a general who did not employ it inconsistently with its most effective principles.

Due to overstretched supply lines, poor weather, a redistribution of German forces to the Mediterranean, and gathering Soviet strength, the final push on Moscow failed. This failure cannot be attributed to von Richthofen, as his units performed valiantly when weather and supplies permitted. Furthermore, when German units retreated without

authorization, von Richthofen held the line with mechanics, pilots, and flak guns. His steadfast nature along with operational success earned von Richthofen the honor of supporting von Manstein's capture of the Crimean Peninsula and Sebastopol, where he once again concentrated his airpower into highly effective attacks.

When von Richthofen, now in command of *Luftflotte* 4, supported the attack on Stalingrad, he witnessed the principle of concentration violated many times, yet still held firm himself. The most crippling violation and one completely beyond his control was the splitting of Army Group South into Army Groups A and B. By pushing into the Caucasus while at the same time attacking Stalingrad, Hitler made a fateful error. Although this well outside the scope of von Richthofen's command, he held firm to his concentration of airpower against the main effort. His units struck Soviet columns, assembly areas, and rail routes both leading up to the front and over the Don and Donets River bridges. In Stalingrad, they concentrated on railroads and river traffic along the Volga. When the Sixth Army requested piecemeal attacks that detracted from the main effort, von Richthofen complained directly to Paulus. With his aircraft now dropping bombs "less than a hand grenade's throw from the German infantry," von Richthofen argued that at some point ground troops should be able to fend for themselves.[595]

In perhaps the greatest violation of the principles of airpower, Hitler sent the order for von Richthofen to resupply Paulus' isolated troops by air. Von Richthofen was livid over this decision, as it was a clear violation of the application of airpower. Allowing Paulus to become encircled, whether temporarily or not, was beyond comprehension. As von Richthofen predicted, Stalingrad was a complete and entirely avoidable disaster; he told Hitler as much during a personal interview in the aftermath. Von Richthofen's candor and steadfast adherence to the proper application of airpower earned him the admiration of Hitler and likely contributed to his promotion to *Generalfeldmarschall.*

It is clear that both Quesada and von Richthofen satisfy Clausewitz's requirement for firmness; both men were confident in their understanding of tactical airpower and did not falter in its employment. Throughout his career, Quesada plowed through substantial resistance from strategic bombing advocates. On the other hand, Germany did not struggle with strategic versus tactical bombing theory to the extent the Allies did;

[595] Muller, *The German Air War in Russia,* 91.

actually, this probably would have been a good thing. In any case, von Richthofen remained steadfast in his application of the principles of airpower in the face of many ground commanders that wanted to fritter it away. In sum, both men remained firm to their understanding of airpower and did not respond to bullies who tried to violate it; this is another mark of a great commander.

Although the first two Clausewitzian criteria for military genius are rooted in intelligence, the third criteria, staunchness, is emotional in nature. Clausewitz simply explains, "*Staunchness* indicates the will's resistance to a single blow."[596] This characteristic "results from strong emotion" and stands in contrast to endurance, which "refers to prolonged resistance" and is sustained by intelligence.[597] Although Quesada and von Richthofen were both highly successful, at first glance one might conclude they did not have to deal with such emotional trauma. A closer inspection quickly reveals this is not the case.

The almost rhythmic ebb and flow of maneuver warfare practiced by both the Allies and Axis was an emotional rollercoaster for many of its commanders. Following a rapid advance, armored columns would often extend their logistical lines to the breaking point while at the same time compact the enemy into a more formidable force. Although these offensive forces could initially have great momentum, Clausewitz explains how defense is the stronger form of warfare partly due to its relative compression of forces and supply lines.[598] Any offensive thrust will eventually culminate and the potential turning of tide can have a significant emotional impact on commanders who are unable to cope with the resultant change of circumstance. Staunch commanders pick themselves up, dust themselves off, and press on, while those lacking this attribute may become mired in indecision or even depressed to the point of complete ineffectiveness.

Quesada passed the staunchness test at least twice during operations in France. In July 1944, one month after the Normandy invasion began and swarmed over the Carentan Peninsula, Allied forces ground to a halt along an east-west line that ran roughly through Caen. Despite repeated attempts to break out, the Allied forces were stalled and many commanders were deeply concerned. Fratricide in both directions, up to this point light

[596] Clausewitz, *On War,* 105.
[597] Clausewitz, *On War,* 105.
[598] Clausewitz, *On War,* 357.

and relatively acceptable in exchange for gaining ground, now became a serious point of contention between ground and air forces. Many well-intentioned bombing missions, aimed at breaking open enemy lines, met with disaster as they added to the friendly body count. As IX TAC commander, Quesada certainly felt the pressure from both the stagnant lines and fratricide.

Demonstrating a characteristic staunchness, Quesada not only overcame any emotional trauma this might have understandably caused, but he also chose this time to improve his command. He remained upbeat during inspections and when coordinating with Bradley. Most impressively, it was during this relative lull in operations that Quesada made what was his greatest contribution to close air support: the air-tank team. Unencumbered by self-doubt and indecision, he turned what many would consider a distressing situation into an opportunity to innovate. Quesada's air-tank team made an immediate impact, as it was ready in time to support Collins' breakout during COBRA.

When Allied forces halted against the Siegfried Line in the fall and the Germans later pushed back during the Battle of the Bulge, Quesada yet again absorbed the hits and pressed forward. During the stalemate on the Siegfried Line, he worked closely with Hodges and tirelessly designed and attempted operations such as Queen. Overall, these were sound plans and were not causal in the Allies' failure to break through. Rather, they ran against a limitation of contemporary airpower when employed against hardened German fortifications.

When the Germans pushed west in the Ardennes Offensive during the winter of 1944-45, they temporarily put the Allies on the defensive. Undeterred, Quesada maintained his composure and relentlessly strove to halt their advance. At this point in the war, Germany had lost air superiority and now used poor weather as their air cover. A staunch Quesada ordered fighters to fly at treetop level under the horrific weather in a gamble to find the enemy. When they happened upon a convoy, the Germans were so surprised they did not react until the fighters' last pass; too late to salvage *Kampfgruppe* Peiper's drive towards Liege. Quesada certainly had staunchness: he bounced right back after an emotional hit and returned to the offensive.

Von Richthofen exhibited staunchness similar to Quesada when the tide turned against Army Group Center during its December 1941 drive on Moscow. As Bock's

overextended defense collapsed and extremely poor weather precluded additional air support, several German units began a broad retreat. In many cases, they were streaming right past von Richthofen's own airfields. Instead of panicking that day as many commanders did, von Richthofen absorbed the hit from this turn of fortune and ordered his ground personnel and pilots to man defensive positions and fire directly on Soviet forces with flak guns. This singular act personally endeared him to Hitler.

Even more dramatic was von Richthofen's reaction during what was one of the major turning points in the war: Stalingrad. In August 1942, Army Group B and the Rumanians reached the outskirts of Stalingrad, but in doing so had greatly extended their logistical lines and walked directly into a carefully laid Soviet trap. When the Soviet jaws clamped shut they crushed the Fourth Rumanian Army and trapped Paulus' Sixth Army in Stalingrad. Instead of allowing Paulus to escape while there was still time, Hitler followed the poor advice of Göring among others and ordered Sixth Army to remain in Stalingrad. Von Richthofen objected vigorously, citing the impossibility of supplying Sixth Army by air. During the next few months until 31 January 1943, when Paulus finally surrendered, regardless of his personal opinion von Richthofen did his utmost to resupply the doomed army.

Although the Germans had faced failure before, such as during the Battle of Britain, until this time they ignored any difficulties and still considered themselves superior. When the Germans finally surrendered at Stalingrad, there were no more illusions to hide behind and no escape from this utter failure. This was a tremendous blow to German pride and many formerly resolute commanders were despondent beyond redemption.

Although understandably affected by the ordeal, von Richthofen absorbed the hit and immediately bounced back. The feedback he gave Hitler in February was thoughtful, accurate, and justified; not what one would expect from someone shaken to the core. An emotionally unbalanced individual might have been more defensive, as was the case with Göring, or tried to shift blame, as Jodl and Keitel likely did against von Manstein. Von Richthofen's staunchness earned him the respect of Hitler and the coveted rank of *Generalfeldmarschall*. Furthermore, von Richthofen immediately returned to the Russian front and successfully directed *Luftflotte 4*'s crucial support of von Manstein as

he recaptured Kharkov that March. Although in the aftermath of Stalingrad he gained valuable lessons and a permanent contempt for many in the high command, von Richthofen exhibited staunchness and remained decisive in subsequent operations.

Clausewitz's fourth criterion, strength of character, is above all the "ability to keep one's head at all times of exceptional stress and violent emotion."[599] He considers a strong character as "one *that will not be unbalanced by the most powerful of emotions*."[600] Clausewitz describes several personality types and highlights one in particular as most advantageous: "men who are difficult to move but have strong feelings…are best able to summon the titanic strength it takes to clear away the enormous burdens that obstruct activity in war. Their emotions move as great masses do—slowly but irresistibly."[601] He further explains that those who either lack strong feelings or lack control over them are unable to satisfy this criterion:

> We repeat again: strength of character does not consist solely in having powerful feelings, but in maintaining one's balance in spite of them. Even with the violence of emotion, judgment and principle must still function like a ship's compass, which records the slightest variations however rough the sea.[602]

Quesada definitely possessed strong emotions, but he does not quite fit the above ideal; on occasion, he was quick to anger. As commander of the Thirty-third Fighter Group at Mitchel Field, Quesada lost emotional control when Coast Artillery spotlighted one of his pilots and contributed to the subsequent crash. Although he had every reason to be upset, Quesada should have solved the problem within his chain of command. Instead, he sent an illegal order to Coast Artillery that violated its commander's prerogative; General Marshall had to intervene personally and defuse the situation. Furthermore, Quesada would have occasional outbursts during meetings such as the one Spaatz conducted when reorganizing the Allied command structure in North Africa. Later, as Deputy Commander of NACAF, Quesada had another personal failure when he rebuked and effectively terminated the career of the 81st Fighter Group Commander over

[599] Clausewitz, *On War,* 105.
[600] Clausewitz, *On War,* 106.
[601] Clausewitz, *On War,* 107.
[602] Clausewitz, *On War,* 107.

an insignificant issue; Quesada simply did not like the personality of one of the squadron commanders.

Clausewitz describes these outbursts as "volatile emotion," which "make it doubly hard for such men to preserve their balance; they often lose their heads, and nothing is worse on active service."[603] Yet somehow, Quesada survived this. His time in North Africa, under the forgiving tutelage of Air Vice Marshal Hugh Lloyd, gave him the time and opportunity to control his weakness. According to Clausewitz, "If training, self-awareness, and experience sooner or later teaches them how to be on guard against themselves, then in times of great excitement an internal counterweight will assert itself so that they too can draw upon great strength of character."[604] This is precisely what happened with Quesada. Although there was still an occasional outburst after North Africa, such as when he stormed to the front and a Tiger tank blasted his jeep, these instances were rare and had little impact. If he had been unable to control his emotions, it is highly unlikely Quesada would have been able to maintain close personal relationships with Bradley and Hodges. His exceptional record as IX TAC commander testifies to just how far Quesada had come.

Von Richthofen, on the other hand, almost exactly matches Clausewitz's ideal definition of strength of character from the beginning. Regardless of how dire the situation appeared to be, von Richthofen always remained outwardly calm. Some of this was due to von Richthofen's general skepticism of initial reports from the front. More important, however, was his emotional control that enabled him to remain stoic when others broke.

A prime example that highlights von Richthofen's strength of character was during Germany's drive on Moscow in 1941. On 6 December, the Soviets counterattacked and the overextended German forces broke. Although Hitler forbade any retreat, many of von Bock's forces did so anyway. Even as retreating German forces streamed past his airfields, von Richthofen did not panic and refused to yield ground. His ability to remain calm and stand his ground personally endeared von Richthofen to Hitler. In fact, the *Führer* placed him in temporary command of VI Army Corps when its

[603] Clausewitz, *On War,* 107.
[604] Clausewitz, *On War,* 107.

commander could not stem the retreat of his soldiers; this was a signal honor for an air commander.

In fact, the only moment when von Richthofen may have lost his outward calm was during the ill-advised aerial resupply of the Sixth Army in Stalingrad. When driving him to a meeting with von Manstein, the driver noticed von Richthofen looked visibly shaken and muttered how impossible the enterprise was. This is hardly a lapse in strength of character as it was clearly an isolated incident. Because von Mansteinand his adjutant were not in sight of any troops, it was hardly an outburst, but von Richthofen had every reason to be upset over the incident. The fact that this is the only evidence this study can find against him highlights von Richthofen's immense strength of character.

In sum, both generals displayed substantial strength of character. Quesada seemed to struggle with his emotions more, but by the time he reached England he had learned to control them. Von Richthofen naturally satisfied Clausewitz's ideal personality and did not struggle to maintain control as Quesada did. Whether innate or learned, it is clear from their superb reputations both men possessed substantial strength of character and therefore satisfy Clausewitz's final criterion.

Quesada and von Richthofen clearly satisfy all four of Clausewitz's criteria for military genius, yet there still seems to be one more quality missing from this analysis. There is an underlying motivation for success that drove both men throughout that this study has yet to address: energy. This does not refer to a youthful and temporary enthusiasm. Rather, it refers to a motivating force that most all successful men possess, but many in polite circles choose not to address and speak ill of when they do. Once again, only Clausewitz can bring justice to this overarching quality:

> Of all the passions that inspire man in battle, none, we have to admit, is so powerful and so constant as the longing for honor and renown. The German language unjustly tarnishes this by associating it with two ignoble meanings in the terms "greed for honor" (*Ehrgeiz*) and "hankering after glory" (*Ruhmsucht*). The abuse of these noble ambitions has certainly inflicted the most disgusting outrages on the human race; nevertheless their origins entitle them to be ranked among the most elevated in human nature. It is primarily this spirit of endeavor on the part of commanders at all levels, this inventiveness, energy, and competitive enthusiasm, which vitalizes an army and makes it victorious. And so far as the commander-in-chief is concerned, we may well ask whether history has ever known a

> great general who was not ambitious; whether, indeed, such a figure is conceivable.[605]

Although men possessing energy often loathe admitting it, Clausewitz provides an uncommon and positive voice to the underlying strength from which both Quesada and von Richthofen drew throughout their careers. All too often, this characteristic is relegated to an unmentionable status, similar to the proverbial necessary evil. On the contrary, energy might be the most important of all the criteria this study has analyzed. Neither Quesada nor von Richthofen could have achieved greatness without energy to sustain their other attributes.

Although Quesada entered the military without preconceived notions, this energy drove him from the very beginning. At first glance, his early career appears to have enjoyed an amount of good fortune that any lottery player would envy. Quesada was somehow always in the right place at the right time, volunteered for everything, and rubbed elbows with the men who shaped both airpower's and America's history. Although it is possible that he was just incredibly lucky, it is not statistically plausible. Although this proposal must remain a supposition, as he never admitted it, it is slightly more likely that Quesada occasionally put himself in the right place at the right time. Most important, however, is the fact that he had the capacity to back it up.

This energy likely supported Quesada throughout his operational commands. In North Africa, Quesada was still immature and occasionally betrayed his energy. Examples are his outburst in Spaatz's post-Casablanca meeting with the British and his violation of Lloyd's seniority when complaining about the lack of US command opportunities. Ample quantities of energy occasionally drove Quesada to elicit accusations of arrogance or worse; his episode with the 81st Fighter Group, where he subsequently fired Colonel Wade, offers additional evidence. Quesada learned to control the negative aspects of his energy, however, and contained the majority of these outbursts by the time he took command in England. This energy, the drive to succeed, provided the fuel for Quesada throughout the invasion of Normandy and subsequent operations. He possessed many exceptional qualities, but there was almost certainly an underlying drive for recognition.

---

[605] Clausewitz, *On War,* 105.

In von Richthofen's case, this energy is even easier to identify. Noble families readily admit that they place pressure on their offspring to succeed and gather respect and fame to honor the family name. Von Richthofen clearly desired this fame. He chose a military career, which alone bestows a minimum social status. When he determined the cavalry had no future, he joined the *Luftstreitkräfte*, no doubt partly due to the fame his cousin Manfred enjoyed. After the Great War, von Richthofen made his own luck by using family connections to return to military service. After serving in the Condor Legion, he enjoyed a hero's return with all of the trimmings to include a parade and voluntary speech at a Nazi Party rally. Already well known, von Richthofen's rank and recognition skyrocketed throughout subsequent campaigns in Poland, France, and Russia. Normally stoic in public, von Richthofen's energy betrayed him but once: after meeting with Hitler in the wake of Stalingrad, the newly-appointed *Generalfeldmarschall* could no longer contain his pride. Frankly, why should he? Unlike many others who reached high rank in Nazi Germany, von Richthofen certainly earned it. His energy was like a catalyst that interacted with his other positive qualities, allowing them to help him accomplish great things yet never diminishing. Not only was his career the envy of many, but he accomplished many of these feats while suffering from lingering tuberculosis and a latent brain tumor.

Energy was a crucial yet unacknowledged quality that both men almost certainly possessed. Without sufficient quantities, it is unlikely they could have gathered sufficient vigor to plow through adversity during the darkest times. Put another way, instead of gaining rank and recognition for their successes, what if instead these men were publicly reviled? If they knew, in advance, that they would be disgraced for their efforts it is unlikely they would have persevered. Who would? The contrary example of men who sacrifice their public image in order to do what they feel is right comes to mind, but do not these men also expect history eventually to vindicate them? Perhaps one might willingly suffer such indignity for an isolated event such as the welfare of a loved one. In any case, it is highly unlikely this could sustain anyone over the duration of an entire career. This paper therefore holds that Quesada and von Richthofen must have drawn from a substantial and sustained energy; it further asserts that this energy was the linchpin to both of their successes.

Finally, the portrait of these two men appears sufficiently complete. Taken together, aside from one technicality this paper further asserts both Quesada and von Richthofen have demonstrated sufficient quantities of determination, firmness, staunchness, and strength of character to satisfy Clausewitz's criterion for military genius. The fact that neither of these men rose to the position of commander-in-chief denies them the official brass ring, but this is hardly their fault; chance still holds some of the cards.

Quesada, as a firm supporter of tactical airpower, fought substantial resistance from within his own service. This struggle would only increase after the war as Strategic Air Command successfully jockeyed for position as champion for the newly created United States Air Force. That Quesada was as successful as he was in the struggle makes him worthy of additional praise. In any case, his contributions to tactical airpower were greater than even he realized and still manifest themselves throughout the USAF today.

Von Richthofen, on the other hand, rose to the highest ranks in the Luftwaffe, yet was doomed from the start. Hitler, as commander-in-chief of Nazi Germany, could never qualify as a military genius and brought inevitable ruin upon his Third Reich. As one of the last men to earn the rank of *Generalfeldmarschall* and considerably more capable than the bumbling Göring, von Richthofen could have gone further. Under very different circumstances, he might have even attained the ultimate rank of commander-in-chief. This is thankfully counterfactual, however, as it certainly was not in the interest of the free world. In any case, the downfall of Germany along with a lethal brain cancer precluded any further aspirations for the Prussian noble.

Recommendations

This paper has analyzed two enormously successful tactical airpower generals in the hopes that doing so will inform those who recruit, train, or professionally develop future military leaders. Although this study concentrated on air force officers, its findings are relevant to all services. In addition to the USAF, the US Army, Navy, and Marine Corps all use selection boards, officer development courses, and career planning

pyramids to find, cultivate, and promote their officers. Although acknowledging the limitations inherent in a sample size of two, this study has intentionally traded quantity for quality; a shorter evaluation of these men would have drawn an incomplete picture. With this qualification in mind, we can still be confident of the following five recommendations.

First, although external factors played a lesser role in Quesada and von Richthofen's success, two of them were indispensible. The first was the mentoring senior officers provided both men. It is highly unlikely Quesada would have succeeded without the advice, guidance, and occasional protection of senior officers such as Marshall, Arnold, and Spaatz. These officers identified his potential, placed him in specific positions where he could thrive, and stepped in when he needed guidance. Although von Richthofen seemed to do rather well on his own, he still benefited from senior mentors. His cousin Manfred inspired him during the Great War, Wimmer guided him at the Technical Office, and Willberg brought him to Spain where he earned his first command. Recognizing the substantial investment in time required, this paper recommends senior military leaders identify young officers with unique potential and mentor them beyond the typical assignment cycle; the purpose is to ensure a continuity that is lacking in the current assignment system.

Second, an external factor that lies squarely within the services' jurisdiction is leadership exercises. Both Quesada and von Richthofen benefited from relatively benign combat environments in which to hone their command skills before taking on some of the largest operations in history. The US cannot expect to have a North Africa or Spanish Civil War to prepare its forces for major combat operations, however, and therefore should maintain its major flag exercises. For example, airpower exercises such as Red Flag in Nevada provide an unmatched environment within which young mission commanders can practice. Although these exercises provide immense experience for junior military officers, this paper is primarily concerned with the more senior leaders who direct overall operations.

As military budgets shrink and shift towards overseas contingency operations, large scale conventional exercises such as Red Flag will not escape scrutiny. It is imperative the services maintain these exercises in order to cultivate their officers up and

down the ranks. If these leaders are denied the opportunity to practice their command ability prior to the onset of major combat operations, they will be ill-prepared for war and the consequences bode ill for the US. Exercises such as Red Flag are still robust but may not escape scrutiny as the U.S. continues to shift its focus away from conventional towards irregular warfare. This study recommends these exercises remain vigorous in order to prepare future leaders for conventional as well as irregular warfare.

The third recommendation addresses a pervading myth. Without conducting a survey, this study claims that many Americans believe a personality characteristic common to successful military officers is "Type A." This paper further asserts that Type A behavior as defined by Dr. Meyer Friedman is contrary to the recipe for military genius and therefore promotes an incorrect stereotype worthy of deconstruction.

Dr. Friedman first identified Type A Behavior (TAB) in 1959 with the intent of identifying patients with a high risk for heart attacks, not as a positive characteristic for an exemplary military officer. TAB characteristics are a "sense of time urgency or impatience…so intense that it creates and sustains a chronic sense of irritation or exasperation," and a "designated free-floating hostility," so-called "because of the ubiquity and triviality of the incidents that can evoke hostility."[606]

Although Quesada experienced occasional outbursts that he later learned to control, von Richthofen was, almost without exception, consistently calm under pressure. In any case, it is difficult to convey the stress of combat conditions under which both men labored; a certain amount of urgency is frankly necessary to get the job done. However, TAB is not studied with respect to truly stressful situations such as those found in combat. Dr. Friedman is instead referring to a personality characteristic that manifests throughout normal everyday experiences, from driving a car to filing taxes.

Those who exhibit TAB under ordinary conditions are the last people a service should want in command. As Clausewitz explains, "trifles can suddenly stir them to act, whereas great issues are likely to overwhelm them. Inflammable emotions, feelings that are easily roused, are in general of little value in practical life, and therefore of little value

[606] Meyer Friedman, *Type A Behavior: Its Diagnosis and Treatment* (New York, NY: Plenum Publishing Corporation, 1996), 3-4.

in war."[607] In fact, TAB stands in direct opposition to Clausewitz's definition of strength of character. The military genius is calm under fire and does not lose emotional control. Yet the myth pervades and some mistake TAB in young officers as a positive characteristic. This paper strongly recommends the services teach these officers to control their behavior, or if unsuccessful, prevent their progression to higher positions in which they can cause harm.

Fourth, the military services should identify, cultivate, and promote officers who possess determination, firmness, staunchness, and strength of character. These criteria have survived the many generations that have passed since Clausewitz first identified them; this paper holds they are as timeless as the nature of war itself. Although it appears these are mostly intrinsic qualities, mentors can occasionally coax them along; Quesada's strength of character is a good example. Although few if any officers will achieve the ultimate rank of commander-in-chief, Clausewitz's criteria for military genius are equally applicable to officers up and down the ranks of any service. This paper recommends those who conduct interviews for entry to the services, instruct PME, conduct promotion boards, and mentor young officers reflect on these criteria.

Fifth and finally, this paper recognizes energy for the positive quality that it is. When writing *On War,* first published in 1832 after his death, Clausewitz complained that energy had an unwarranted stigma contrary to its innate value. This complaint is equally valid 177 years later. In fact, the political correctness movement and downplaying of victory in youth sports suggests a trend in the opposite direction. In any case, this study will not attempt to determine the social reasons behind Clausewitz's complaint, but rather confirm they still exist.

Instead, this paper will highlight its overriding importance: energy stands apart from all other criteria in that neither Quesada nor von Richthofen could have succeeded without it. Although displaying excessive energy to others is undesirable for the reasons Clausewitz has already covered, it nonetheless remains a crucial ingredient. Exerting personal energy always involves risk, especially for military commanders and their troops; it is therefore less popular in an increasingly risk-averse culture. This paper's

[607] Clausewitz, *On War,* 106.

final recommendation is for commanders to balance the negative connotations of energy with the understanding that, in its absence, there can be no military genius.

Conclusion

This paper has studied two contemporary tactical airpower generals from World War II, Lieutenant General Elwood "Pete" Quesada and *Generalfeldmarschall* Wolfram *Freiherr* von Richthofen, to determine how they managed to succeed despite considerable obstacles. It has searched for common elements among their personal backgrounds, professional education, officer development, and operational experience to find commonalities that help explain their success. Separating external from internal factors, it has further attempted to determine which deserves the most credit.

Although both external and internal factors contributed, this study finds internal characteristics played the far greater role in the success of these two men. Furthermore, the same qualities that made a successful commander hundreds of years ago are equally pertinent today; they are as timeless as the nature of war itself. When one finds a military genius, they will also find determination, firmness, staunchness, and strength of character.

The goal of this study is to assist those who conduct officer acquisition, training, and professional development by providing them with criteria that will help them select and cultivate future leaders. Since the human factor in virtually any military operation remains the weakest, yet most crucial link, the services can ill-afford to get this wrong. This is true regardless of technological advances or the changing character of warfare, from counterinsurgency operations in Afghanistan to major combat operations against near-peer competitors.

With this ultimate objective in mind, the journey ends here with words of advice from Clausewitz himself:

"If we ask what sort of mind is likeliest to display the qualities of military genius, experience and observation will both tell us that it is the inquiring rather than the creative mind, the comprehensive rather than the specialized approach, the calm rather than the excitable head to which in war we would choose to entrust the fate of our brothers and children, and the safety and honor of our country."[608]

[608] Clausewitz, *On War,* 112.

Bibliography

Unpublished Sources

15th Air Control Squadron Historical Data. "The African Incident." Transcript, 9 Jan 1942-29 Feb 1944, SQ-FI-CONTL-15-HI. Maxwell AFB, AL: USAF Historical Research Center, 1944.

70th Fighter Wing History. July 1944, WG-70-HI. Maxwell AFB, AL: USAF Historical Division, Air University, 1944.

350th Fighter Group Historical Data. 1 Oct 1942 to 17 Aug 1943, GP-350-HI. Maxwell AFB, AL: USAF Historical Research Center, 1942.

Air Corps Information Division. *Comparative Airpower of Leading Nations,* "Monthly Production Capacity: European Airpowers." Graph, 19 January 1940, 145.91-135. Maxwell AFB, AL: USAF Historical Research Center, 1940.

Brereton, Lt Gen Lewis, Commander, Ninth Air Force. To Arnold, General Henry Commander, Army Air Forces. Letter, 20 July 1944.

Coles, Harry. *Ninth Air Force Participation in the Desert Campaign to 23 January 1943,* Army Air Forces Historical Study 30. Maxwell AFB, AL: USAF Historical Division, Air University, 1945.

"Conference Between General Patton, General Weyland, and Third Army Correspondents." 9 December 1944, 167.7104-101. Maxwell AFB, AL: USAF Historical Research Center, 1944.

Deichman, Paul. *German Air Force Operations in Support of the Army,* USAF Historical Study 163. Maxwell AFB, AL: Historical Research Division, US Department of the Air Force, 1962.

Eaker, Ira. Interview by Ahmann, Hugh. 10 February 1975, transcript, K239.0512-829. Maxwell AFB, AL: USAF Historical Research Center, 1982.

Finney, Robert. *History of the Air Corps Tactical School, 1920-1940,* USAF Historical Study 100. Maxwell AFB, AL: USAF Historical Division, Air University, 1955.

Frisbee, John, ed. *Makers of the United States Air Force.* Maxwell AFB, AL: Office of Air Force History, 1987.

Garland, Blair. Interview by Ahmann, Hugh. 7 June 1982, transcript, K239.0512-1332. Maxwell AFB, AL: USAF Historical Research Center, 1984.

George, Robert. *Ninth Air Force, April to November 1944,* Army Air Forces Historical Study 36. Maxwell AFB, AL: USAF Historical Division, Air University, 1945.

Hudson, John. Interview by Hasdorff, James. 16 January 1987, transcript, K239.0512-1737. Maxwell AFB, AL: USAF Historical Research Center, 1997.

Kincaid, Alvin. "Announcement of Assignment." IX Tactical Air Command General Order Number 2, 24 April 1944, 536.02. Maxwell AFB, AL: USAF Historical Research Center, 1944.

Memorandum, "Concerning Allied Air Effort During the Battle of the Bulge." 28 September 1945, 533.4501-5. Maxwell AFB, AL: USAF Historical Research Center, 1945.

Memorandum from Commander, IX TAC, to 70th Fighter Wing. 30 July 1944, WG-70-HI. Maxwell AFB, AL: USAF Historical Research Center, 1944.

Memorandum on Fighter-bomber control for D-Day. June 1944, 533.4501-8. Maxwell AFB, AL: USAF Historical Division, Air University, 1944.

Message. Adv. HQ. IX Fighter Command. To commanding general, Ninth Tactical Air Command. 8 June 1944.

Nielsen, Andreas. *The German Air Force General Staff.* USAF Historical Monograph 173. Maxwell AFB, AL: USAF Historical Division, Air University, 1959.

Ninth Air Force Interrogation Unit, "Assessment of Air Attack as Determined from Prisoners of War and Enemy Commanders." 533.4501-9. Maxwell AFB, AL: USAF Historical Division, Air University, 1945.

Ninth Tactical Air Command, Message from HQ 9th AF, 536.02. Maxwell AFB, AL: USAF Historical Division, Air University, 1945.

Ninth TAC, "Ninth TAC History, March 1945." March 1945, 536.02. Maxwell AFB, AL: USAF Historical Division, Air University, 1945.

Ninth TAC, "The Invasion Air Force." January 1945, 533.306-1. Maxwell AFB, AL: USAF Historical Division, Air University, 1944.

Patton, George. "Soldiers of the Third Army, Past and Present." General Order 98, 9 May 1945, 168.7104-99. Maxwell AFB, AL: USAF Historical Research Center, 1945.

Plocher, Hermann. "The German Air Force Versus Russia, 1941," USAF Historical Study 153. Maxwell AFB, AL: USAF Historical Division, Air University, 1965.

Plocher, Hermann. "The German Air Force Versus Russia, 1942," USAF Historical Study 154. Maxwell AFB, AL: USAF Historical Division, Air University, 1966.

Plocher, Hermann. "The German Air Force Versus Russia, 1943," USAF Historical Study 155. Maxwell AFB, AL: USAF Historical Division, Air University, 1967.

Quesada, Elwood. Interview by Long, Steve, and Stevenson, Ralph. 12 May 1975, transcript, K239.0512-838. Maxwell AFB, AL: USAF Historical Research Center, 1984.

Ramsay, John. *Ninth Air Force in the ETO, 16 October 1943 to 16 April 1944,* Army Air Forces Historical Study 32. Maxwell AFB, AL: USAF Historical Division, Air University, 1945.

"Redesignation of Units." Ninth Air Force General Order Number 103, 18 Apr 1944, 536.02. Maxwell AFB, AL: USAF Historical Research Center, 1944.

"Relation of Air Corps Expenditures to Total War Department (Military) Expenditures, 1925-1938." Graph, 167.6-5. Maxwell AFB, AL: USAF Historical Research Center, 1939.

Speidel, Wilhelm. *The Campaign in Western Europe,1939-1940; Part 3, Vol 2,* History of the Air War Study Group, Karlsruhe. Maxwell AFB, AL: USAF Historical Division, Air University, 1958.

Suchenwirth, Richard. *Command and Leadership in the German Air Force,* USAF Historical Study 174. Maxwell AFB, AL: USAF Historical Division, Air University, 1969.

Suchenwirth, Richard. *Historical Turning Points in the German Air Force War Effort.* USAF Historical Study 189. Maxwell AFB, AL: USAF Historical Division, Air University , 1959.

Suchenwirth, Richard. *The Development of the German Air Force, 1919-1939,* USAF Historical Study 160. Maxwell AFB, AL: USAF Historical Division, Air University, 1968.

"Transcript of Talks Delivered by General Patton and General Weyland at Press Sortie, Headquarters, XIX Tactical Air Command." 16 December 1944, 167.7104-101. Maxwell AFB, AL: USAF Historical Research Center, 1944.

The Rise and Fall of the German Air Force. Air Ministry Pamphlet 248. Great Britain: Air Ministry, 1948.

Uebe, Klaus. *Russian Reactions to German Airpower in World War II,* USAF Historical Study 176. Maxwell AFB, AL: USAF Historical Division, Air University, 1964.

Ultra: History of US Strategic Air Force versus German Air Force. United States National Security Agency. Washington, DC: National Security Agency, 1945.

War Diary of 62nd Fighter Wing. 12 December 1942, WG-62-HI. Maxwell AFB, AL: USAF Historical Research Center, 1942.

Weyland, O. P. Interview by Hasdorff, James, and Parrish, Noel. 19 December 1974, transcript, K239.0512-813 C.1. Maxwell AFB, AL: USAF Historical Research Center, 1984.

Published Sources

Arnold, Henry. *Global Mission.* New York, NY: Harper & Brothers, 1949.

Arnold, James, Hargis, Robert, and Pavlovic, Darko. *US Commanders in World War II.* Oxford: Osprey Publishing, 2002.

Atikinson, Rick. *The Day of Battle: The War in Sicily and Italy, 1943-1944.* New York, NY: Henry Holt and Company, 2007.

Bergstrom, Christer, and Mikhailob, Andrey. *Black Cross/Red Star: Air War over the Eastern Front.* Pacifica, Ca: Pacifica Military History, 2000.

Biddle, Tami. *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas about Strategic Bombing, 1914-1945.* Princeton, NJ: Princeton University Press, 2002.

Blaker, James. *Transforming Military Force: The Legacy of Arthur Cebrowski and Network Centric Warfare.* Westport, CN: Praeger Security International, 2007.

Bomba, Ty, and Perello, Chris. *Hitler's Army.* Conshohocken, PA: Combined Books, 1996.

Boyne, Walter. *Clash of Wings: Airpower in World War II.* New York, NY: Simon and Schuster, 1994.

Bradley, Omar. *A Soldier's Story*. New York, NY: Holt, 1951.

Brooks, Victor. *The Normandy Campaign; From D-Dat to the Liberation of Paris.* Cambridge, MA: Da Capo Press, 2002.

Buchan, John. *A History of the Great War*. Boston, MA: Houghton Mifflin Company, 1922.

Burrows, William. *Richthofen: A True History of the Red Baron.* New York, NY: Harcourt, Brace and World, 1969.

Caldwell, Donald, and Muller, Richard. *The Luftwaffe Over Germany: Defense of the Reich.* St. Paul, MN: MBI Publishing, 2007.

Carafano, James. *GI Ingenuity: Improvisation, Technology, and Winning World War II.* Westport, CN: Praeger Security International, 2006.

Chennault, Claire. *Way of a Fighter: The Memoirs of Claire Lee Chennault.* Tucson, AZ: J Thorvardson, 1991.

Christienne, Charles, and Lissarrague, Pierre. *A History of French Military Aviation.* Washington, DC: Smithsonian Institution Press, 1986.

Clausewitz, Carl von. *On War.* Edited and Translated by Michael Howard and Peter Paret. Princeton, NJ: Princeton University Press, 1976.

Citino, Robert. *The Evolution of Blitzkrieg Tactics: Germany Defends Itself Against Poland, 1918-1933.* Westport, CT: Greenwood, 1987.

Coffman, Edward. *The Regulars.* Cambridge, MA: Belknap Press of Harvard University, 2004.

Corum, James. *The Luftwaffe: Creating the Operational Air War, 1918-1940.* Lawrence, KS: University Press of Kansas, 1997.

Corum, James. *Wolfram von Richthofen: Master of the German Air War.* Lawrence, KS: University Press of Kansas, 2008.

Craven, Wesley, and James Cate, Eds. *The Army Air Forces in World War II*. Vols. I-III. Chicago, IL: University of Chicago Press, 1948-51

Deichman, Paul. *Luftwaffe Methods in the Selection of Offensive Weapons.* Manhattan, KS: MA/AH Pub.,1982.

Deichman, Paul. *Spearhead for Blitzkrieg: Luftwaffe Operations in Support of the Army, 1939-1945.* New York, NY: Ivy Books, 1996.

Douhet, Giulio. *The Command of the Air,* trans. Dino Ferrari. 1942; new imprint, Washington, DC: Air Force History and Museums Program, 1998.

Dressel, Joachim and Griehl, Manfred. *Bombers of the Luftwaffe.* London: Arms and Armour, 1994.

Dunnigan, James. *How to Make War: A Comprehensive Guide to Modern Warfare for the Post-Cold War Era.* New York, NY: Morrow, 1993.

Forczyk, Robert, and Gerrard, Howard. *Moscow 1941: Hitler's First Defeat.* Oxford: Osprey, 2006.

Franks, Norman, Giblin, Hal, and McCrery, Nigel. *Under the Guns of the Red Baron.* New York, NY: Barnes and Noble, 1999.

Franks, Norman and van Wyngarden, Greg. *Fokker Dr 1 Aces of World War I.* Oxford: Osprey, 2001.

Freiser, Karl-Heinz, and Greenwood, John. *The Blitzkrieg Legend: The 1940 Campaign in the West.* Annapolis, MD: Naval Institute Press, 2005.

Friedman, Meyer. *Type A Behavior: Its Diagnosis and Treatment.* New York, NY: Plenum Publishing Corporation, 1996.

Gilbert, Bill. *Airpower: Heroes and Heroism in American Flight Missions, 1916 to Today.* New York, NY: Citadel Press, 2003.

Goda, Norman. "Black Marks: Hitler's Bribery of His Senior Officers During World War II." In *Corrupt Histories,* ed. Emmanuel Kreike and William C. Jordan. Rochester, NY: Boydell & Brewer, 2004.

Gooderson, Ian. *Airpower at the Battlefront: Allied Close Air Support in Europe, 1943-45.* Portland, OR: F. Cass, 1998.

Green, William. *Warplanes of the Third Reich.* New York, NY: Galahad, 1990.

Hall, David. *Strategy for Victory: The Development of British Tactical Airpower, 1919-1943.* Westport, CT: Praeger Security International, 2008.

Hansell, Haywood. *The Air Plan that Defeated Hitler.* Atlanta, GA: Higgins-McArthur, 1972.

Hart, Stephen, and Daugherty, Leo. *Battle of the Hedgerows: Bradley's First Army in Normandy, Jun-July 1944.* Osceola, WI: Zenith Press, 2001.

Hastings, Max. *Overlord: D-Day and the Battle for Normandy.* New York, NY: Simon and Schuster, 1984.

Hayward, Joel S. *Stopped at Stalingrad: the Luftwaffe and Hitler's Defeat in the East, 1942-1943.* Lawrence, KS: the University Press of Kansas, 1998.

Higham, Robin, and Harris, Stephen. *Why Air Forces Fail: The Anatomy of Defeat.* Lexington, KY: The University Press of Kentucky, 2006.

Hirsch, Sidney, et al. *Heinkel 177.* Fallbrook, CA: Aero Publishers, 1967.

Homze, Edward. *Arming the Luftwaffe: The Reich Air Ministry and the German Aircraft Industry 1919-1939.* Lincoln, NE: University Press of Nebraska, 1976.

Hooten, Earnest. *Eagle in Flames: The Fall of the Luftwaffe.* London: Brookhampton Press, 1999.

Hooten, Earnest. *Phoenix Triumphant: The Rise and Rise of the Luftwaffe.* London: Arms and Armour, 1994.

Howe, George. *Northwest Africa: Seizing the Initiative in the West.* Washington, DC: Center for Military History, 1970.

Hughes, Thomas A. *Overlord: General Pete Quesada and the Triumph of Tactical Airpower in World War II,* New York, NY: The Free Press, 1995.

Irving, David. *Goering: A Biography.* New York, NY: William Morrow and Company, 1989.

Irving, David. *The Rise and Fall of the Luftwaffe: The Life of Field Marshal Erhard Milch.* Boston, MA: Little, Brown and Company, 1973.

Jablonsky, David. *Roots of Strategy.* Mechanicsburg, PA: Stackpole Books, 1999.

Kay, Antony, and Couper, Paul. *Junkers Aircraft and Engines, 1913-1945.* Annapolis, MD: Naval Institute Press, 2004.

Kilduff, Peter. *Richthofen: Beyond the Legend of the Red Baron.* New York, NY: John Wiley and Sons, 1993.

Kitchen, Martin. *The German Officer Corps, 1890-1914.* Oxford: Clarendon Press, 1968.

Kohn, Richard. *Air Superiority in World War II, Korea, and Vietnam: An Interview with General James Ferguson, General Robert Lee, General William Momyer, and Lieutenant General Elwood Quesada.* Washington, DC: Office of Air Force History, 1983.

Kreis, John. *Piercing the Fog: Intelligence and Army Air Forces Operations in World War II.* Washington: DC, Air Force History and Museums Program, 1996.

Macksey, Kenneth. *Guderian: Creator of the Blitzkrieg.* New York, NY: Stein and Day, 1975.

Macksey, Kenneth. *Kesselring: German Master Strategist of the Second World War.* Mechanicsburg, PA: Stackpole Books, 1996.

Manstein, Erich von. *Lost Victories.* Novato, CA: Presidio Press, 1982.

Marshall, George C. *George C. Marshall: Interviews and Reminisces for Forrest C. Pogue.* Lexington, Virginia: George C. Marshall Research Foundation, 1991.

Mason, Herbert. *The Rise of the Luftwaffe: Forging the Secret German Air Weapon, 1914-1940.* New York, NY: The Dial Press, 1973.

McManus, John. *The Americans at Normandy: The Summer of 1944.* New York, NY: Forge, 2004.

Megargee, Geoffrey. *War of Annihilation: Combat and Genocide on the Eastern Front, 1941.* Lanham, MD: Rowman and Littlefied, 2006.

Middlebrook, Martin, and Everitt, Chris. *The Bomber Command War Diaries.* London: Penguin, 1985.

Miller, Donald. *Masters of the Air.* New York, NY: Simon & Schuster, 2006.

Millett, Allan, and Murray, Williamson. *Military Effectiveness, Volume II: The Interwar Period.* Boston, MA: Allen and Unwin, 1988.

Mitchell, William. "Aeronautical Era." *Saturday Evening Post*, 20 December 1924.

Muller, Richard. *The German Air War in Russia.* Baltimore, MD: The Nautical and Aviation Publishing Company of America, 1992.

Munson, Kenneth. *Aircraft in World War I.* Garden City, NJ: Arco, 1977.

Murray, Williamson. *Strategy for Defeat: The Luftwaffe 1933-1945.* Maxwell Air Force Base, AL: Air University Press, 1983.

Murray, Williamson. "The Luftwaffe Experience, 1939-1941," in *Case Studies in the Development of Close Air Support*, Benjamin Franklin Coolidge, ed. Washington, DC: Office of USAF History, 1990.

Murray, Williamson, and Millet, Allan. *A War to be Won.* Cambridge, MA: Belknap Press of Harvard University Press, 2000.

Neufeld, Michael. *The Rocket and the Reich.* New York, NY: Free Press, 1995.

Orange, Vincent. *Coningham: A Biography of Air Marshal Sir Arthur Coningham.* Washington, DC: Center for Air Force History, 1992.

Orange, Vincent. *Tedder: Quietly in Command.* Portland, OR: F. Cass, 2004.

Overy, Richard. *The Air War: 1939-1945.* Washington, DC: Potomac Books, 1980.

Parker, Geoffrey ed. *The Cambridge History of Warfare.* New York, NY: Cambridge University Press, 2005.

Parton, James. *"Air Force Spoken Here:" General Ira Eaker and the Command of the Air.* Bethesda, MD: Adler and Adler, 1986.

Payne, Stanley. *The Franco Regime, 1936-1975.* (Madison, WI: University of Wisconsin Press, 1987.

Proctor, Raymond. *Hitler's Luftwaffe in the Spanish Civil War.* Westport, CT: Greenwood Press, 1983.

Ratcliff, Rebecca. *Delusions of Intelligence: Enigma, Ultra, and the End of Secure Ciphers.* New York, NY: Cambridge University Press, 2006.

Redemann, Hans. *Innovations in Aircraft Construction.* West Chester, PA: Schiffer Military History, 1991.

Richthofen, Manfred Freiherr von. *The Red Battle Flyer.* New York, NY: Robert M. McBride and Company, 1918.

Ries, Karl, and Ring, Hans. *The Legion Condor: a History of the Luftwaffe in the Spanish Civil War, 193-1939.* West Chester, PA: Schiffer Military History, 1992.

Ring, Hans, and Girbig, Werner. *Jagdgeschwader 27*. Stuttgart: Motorbuch Verlag, 1991.

Saltzman, B. Chance, and Searle, Thomas. *Introduction to the United States Air Force.* Maxwell AFB, AL: Air University Press, 2001.

Shiner, John F. *Foulois and the U.S. Army Air Corps, 1931-1935*. Washington, DC: Office of Air Force History, U.S. Air Force, 1984.

Spick, Mike. *Luftwaffe Bomber Aces.* London: Greenhill, 2001.

Stahlberg, Alexander. *Bounden Duty: The Memoirs of a German Officer, 1932-1945*. London: Brassey's, 1990.

Strassler, Robert, ed. *The Landmark Thucydides*. New York, NY: Touchstone, 1996.

Sullivan, Brian. "The Italian Armed Forces, 1918-40," in *Military Effectiveness*, vol. 2. Edited by Allan Millett and Williamson Murray. Boston, MA: Unwin Hyman, 1988.

Tedder, William A. *Airpower in War*. London: Hodder and Stoughton, 1954.

Terraine, John. *A time for courage: the Royal Air Force in the European War, 1939-1945.* New York, NY: Macmillan, 1985.

Terraine, John. *The right of the line: the Royal Air Force in the European war, 1939-1945.* Hertfordshire: Wordsworth Editions, 1997.

Thomas, Gordon, and Witts, Max. *Guernica: The Crucible of World War II.* New York, NY: Stein and Day, 1975.

Treadwell, Terry, and Wood, Alan. *The First Air War: A Pictorial History*. New York, NY: Barnes and Noble, 1996.

Uldrich, Jack. *Soldier, Statesman, Peacemaker: Leadership Lessons from George C. Marshall.* New York, NY: AMACOM, 2005.

Underwood, Jeffrey. *The Wings of Democracy.* College Station, TX: Texas A & M University Press, 1991.

VanWyngarden, Greg. *Early German Aces of World War I.* Westminster, MD: Osprey Direct, 2006.

Ward, John. *Hitler's Stuka Squadrons: The Ju 87 at War, 1936-1945.* Staplehurst: Spellmount, 2004.

Weal, John. *Luftwaffe Schlachtgruppen.* New York, NY: Osprey Publishing, 2003.

Windsor, H. H. ed. "The Flight of the ?." *Popular Mechanics,* Vol 51, No 3. March 1929.

Wishnevsky, Stephen. *Courtney Hick Hodges: From Private to Four-Star General in the United States Army.* Jefferson, NC: McFarland and Company, 2006.

Ziemke, Earl, and Bauer, Magna. *Moscow to Stalingrad: Decision in the East.* Washington, DC: Center of Military History, United States Army, 1987.